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December 1992

BOARDWATCH MAGAZINE

Guide to Online Information Services and Electronic Bulletin Boards

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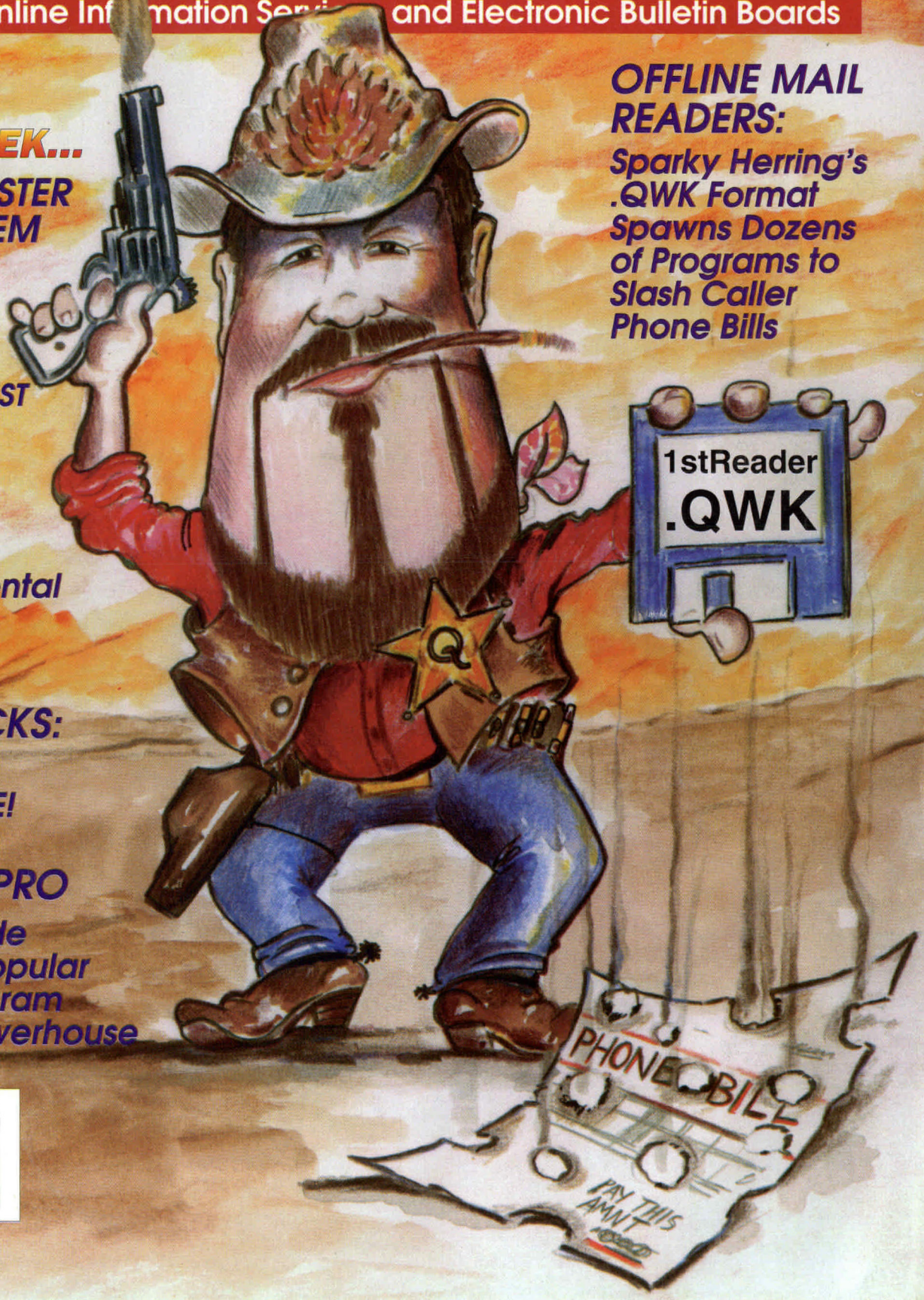

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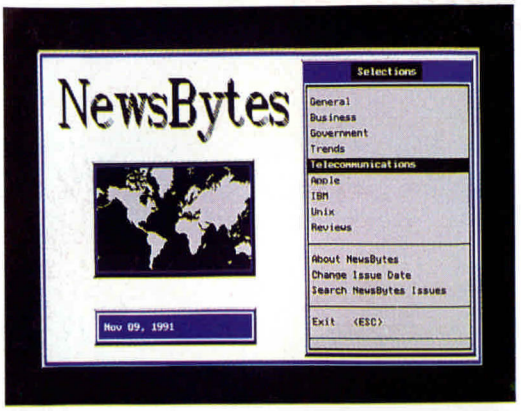

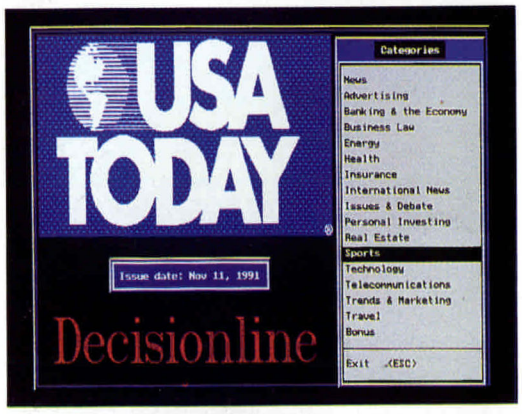

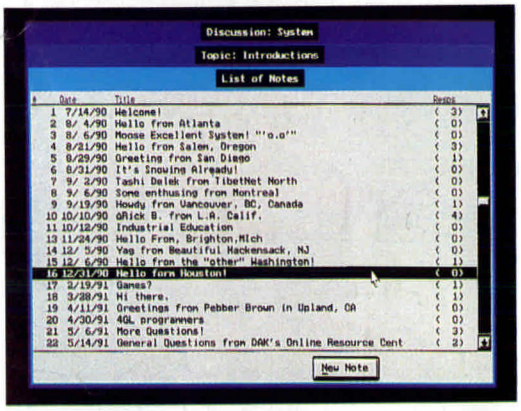

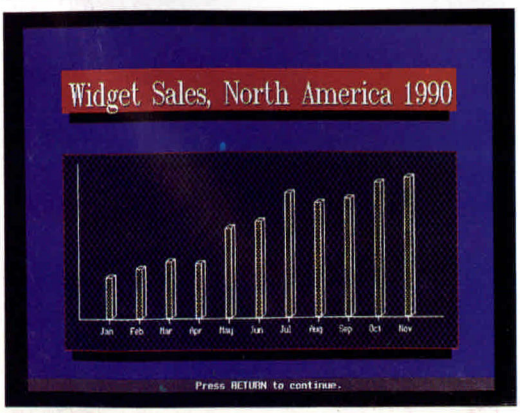

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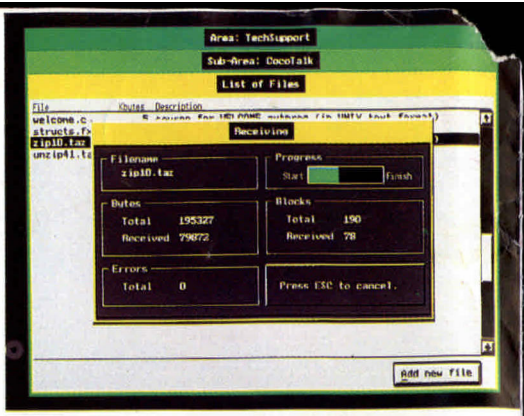

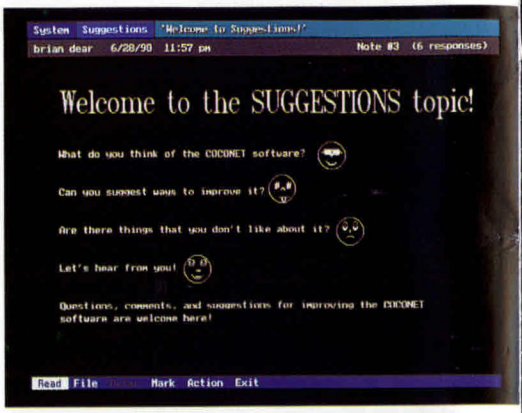

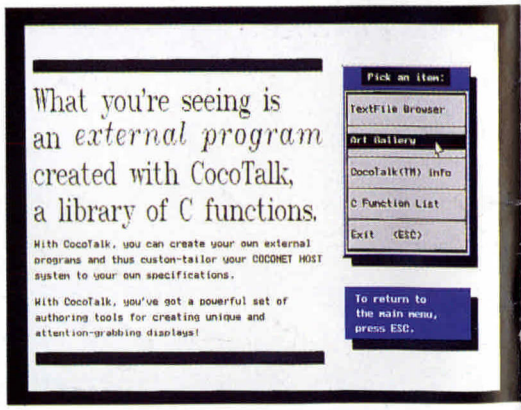

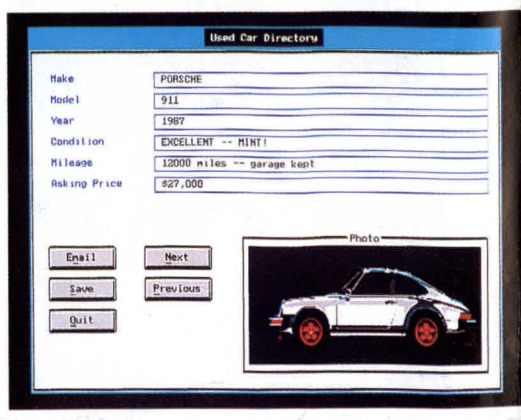

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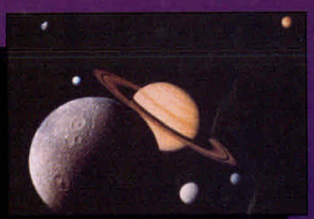
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EDITOR'S NOTES

VISIONS OF SUGAR PLUMS . . . AND COPYRIGHTS.

The very early days of the personal computer were a bit of a magic time. I don't mourn for their loss entirely, but the community was rather wide open with people like Ward Christensen and Andrew Fleugleman lauding the concept of contributing works to the community. Bulletin boards were free, software was free, telephone calls were expensive.

It had to change to progress I suppose. And while my own acknowledgement of the inevitability of a commercial bulletin board industry has been somehow recast as an advocacy for blatant commercialism, I still view some aspects of the current trend toward cutting the cheese in ever finer slices with some alarm.

This mixed emotion has merit on both sides. In a perfect world where shareware software and bulletin boards for pay work sufficiently to provide a financial incentive to software authors and BBS operators, we would quite naturally have more and better software, and more and better bulletin boards. I'm for all that well and good enough.

Most of the economic basis for an online economy rests on Title 17 of the United States Code regarding copyrights - the right of the creator of a work to control the reproduction of the work. This law is a painful balance between the property rights of creators and the rights of the public to access information. It's always been imperfect, and in fact the actual practical law we live with is more embedded in the case history of disagreements over the law than it is on the foundation of the written law itself. I suppose most law works this way, but my sense is that copyright law works this way more than most.

The concept of shareware rests on this law - and apparently allows the author to control the right of copying the program. I'm going to guess I believe that releasing software copies to the public, and then specifying a bewildering array of restrictions on how and when they use it, is actually pretty shakey. The original concept rather loosely of "if you use it - send us money" has given way to an amazingly creative array of restrictions based on who you are, what you're using it for, and what day of the week it is. Some of these license "agreements" are absurd. Personally, I don't believe the law covers this extension of right of copy to a right to dictate how and when you do what, and who you are allowed to be on what day. Certainly it poses an enforcement problem but I would question its legality as well.

Actually, there is very little case law supporting all of this. Almost every dispute so far has been settled out of court under the threat that it may be expensive if the infringer finds that the law does support all these restrictions. And there is no shortage of duly educated and licensed lawyers working the online world ever ready to split hairs as finely as any participant desires - theoretically of course.

On the other hand, the recent episode with Playboy magazine suing Event Horizons is pretty clear I guess. They publish a magazine. They publish photos. Event Horizons had scanned images of the photos online. And facing millions of dollars in potential liability, they settled out of court. Again, we seem to have a decision here without benefit of court. We now accept that scanned images of photographs are a copyright infringement. I suppose it makes sense. But it was never "decided" and I guess a case could be made against the concept. But in any event, it is now accepted within the community and that probably lends a great deal of weight to it. And Playboy is going around the country shaking down BBS operators for cash without a chance of any of them being able to afford actually forcing the issue to court. Good work if you can get it. Wouldn't it be odd if it turned out to be based on a house of cards?

I guess I believe magazines should be protected by copyright law, but then I would. And I like the idea of a programmer being able to contrive a program and profit thereby without having to buy into the retail channel - to get a start in the shareware world. But there are extremes.

The result, if taken to extreme and paraphrasing science fiction author Bruce Sterling, is a world where every bit and pixel in cyberspace will come complete with a price tag. And we're not far from it at this point.

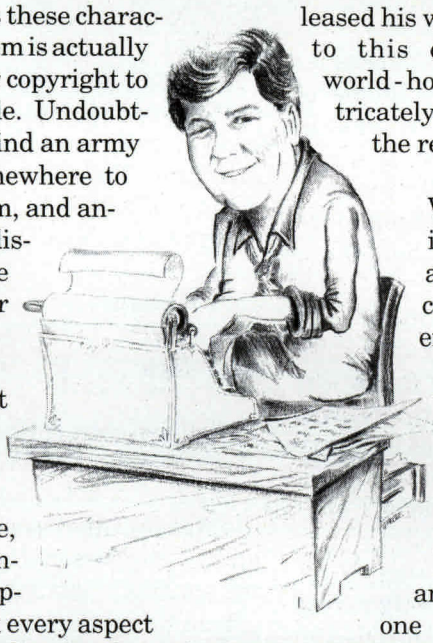
As an aside example, there are a handful of very tiny software developers working on NAPLPS tools for bulletin boards. This thing is still in its infancy, and we already have two broken terminal programs on the street - neither one are actually useful and they both work differently. But in the process of working on the tools, an imbroglio has broken out over copyrights to some actually pretty crude images done with a graphics program - NAPLPS frames as they are coming to be called. They were done to demonstrate NAPLPS and put out in public to demonstrate NAPLPS - and all participants agree they are to be shared - but by certain end users and not used by anyone else, and further not to be used on certain days, and..... it goes on. At heart, the creators want all the advantages of a wide open public network where

thousands can view and become aware of the work, but then they want in the same breath to dictate how they are used in any area where there might be the possibility of a buck. And with a user base currently probably less than a few hundred callers who can even view them, bitter acrimony and threats of lawsuits over these images has already come to a head.

The emotional struggle these people go through to justify all this is painful to watch. They are the new breed of Tele-pathetics. Surrounded by possibilities and confounded and bound by fear and greed, they agonize over release of anything they do, fearful of missing an ethereal chance at a buck, and at the same time desperate for public acknowlegement of something that will never be acknowledged until it is made public. What if they release something and no one notices or cares? Even more painful is the concept that they could release something, receive public acknowledgement, and somebody ELSE make a buck at it. They are greedy for the advantages of a free public network forum, and fearful of the consequences of using it. If they could only have it both ways....

That millions of dollars has changed hands for terminal programs and BBS software incorporating XMODEM, with no payment to the original authors, doesn't ease the pain - it makes it worse for the telepathetics. And the result, in my opinion, is endless debate of theoretical law made more of wishful thinking than of Title 17. The search for the holy grail that will allow them to have their cake and eat it too.

Now U.S. Robotics is waving the copyright flag over AT commands they themselves engineered into their modems. The commands work to suspend some crippling in their ROM code - making Sportster Modems very nearly functionally equivalent to the higher priced Courier Dual Standard model. And the company, who counted on the fact that no one would ever discover these commands, is now struggling to establish that an AT command anyone can enter in their terminal program, consisting of precisely 20 characters, is actually copyrighted information and any software that automatically sends these characters to the modem is actually infringing their copyright to their ROM code. Undoubtedly, they can find an army of lawyers somewhere to agree with them, and another army to dispute the case from the other side.



Is there no limit to copyright? Can every bit, pixel, character, jot and tittle, not only be controlled in the copies made, but in every aspect of its use and application thereafter? Where will it end? E-mail messages? E-mail message fragments? Have I stolen from Bruce Sterling in mentioning his bit and pixel with a price tag metaphor? NAPLPS frames? NAPLPS fonts? NAPLPS graphic primitives? Pixels?

We actually need either some lawsuits or some legislation in cyberspace. Despite the fact that our legal system has grown too expensive for anyone to deal with doesn't alleviate the need for definition. I disagree with those who insist that adequate case law exists in non-online arenas. Copyright law at its heart is an exercise in "drawing lines." The online world is actually quite different and while copyright law should hold generally, we desperately need to redefine how fair use applies to a very different world where the technology of making copies is indeed very different. In a world where a few keystrokes makes a copy, and created works do much more than simply inform, the "lines" are quite likely in different places. There must be some defined limits on what an author can dictate once he has released his work to this online world - however intricately he words the release.

Without it, we rapidly approach a situation where everyone can claim some ownership of everything created, and we will become mired in a more or less constant state of legal frenzy - with everyone online a lawbreaker. In such an environment, anyone who becomes successful at anything then automatically becomes the target of a lawsuit by the telepathetic. And the impetus then to do anything substantive goes away - gutting the intent of the original copyright law.

Until we do obtain some more rigorous definitions, the grace period enjoyed online thus far with regards to copyright is clearly over. Virtually everything and everyone is in open season. The act of using a modem itself may be a copyright violation....subject to the fearful and agonized reasoning of the telepathetic.

Jack Rickard

LETTERS

Address correspondence to LETTERS, Boardwatch Magazine, 7586 West Jewell Ave., Suite 200, Lakewood, CO 80232 or by e-mail to **letters@boardwatch.com.**

Dear Jack,

I just picked up a copy of the October issue and there are a couple of addendums I would like to make to Bill Gram-Reefer's article about "Host Software with an Attitude." A couple of changes have been made since Bill wrote the article.

To begin with, the name has changed. While working on the program another softwaer (some sort of math problem apparently) was released with the name of MILO. To avoid any conflicts Colen and I decided to change the name to "Public Address."

Second, Colen has recently moved so the phone number included in the file is now invalid. His new number is **(503)687-0058.** We are also offering a fidonet ECHO on the project which people can carry if they wish - please contact Colen for more information.

Finally, I would just like it known that interested parties can contact me via InterNet since AOL now has internet access. My internet address is GOberfield@aol.com.

Thanks for your time, and I hope we didn't cause too many problems (grin).

Greg Oberfield.
Princeton, New Jersey

Dear Jack:

Now see what you gone and done? It's EVERYWHERE... that G word. It was used in BOTH conventions keynote speeches. It's on billboards everywhere. Some even "G-Worded" you at the completion of your speech at ONE BBSCON.

All your fault.

Don Inglehart, Sysop
Happy Trails BBS
Orange California.

Dear Don:

I can hardly take credit for all of it, but I do appreciate the outpouring of support from so many quarters on this issue. Yes, I was blatantly G-worded at ONE BBSCON - and it couldn't have been the speech.

Jack Rickard

Dear Jack:

We've been getting BoardWatch for about a year, and I love it!

(Rampaging digressions about God and all - my personal opinion is that the spritiual "oomph" has gone out of traditional churches in America, and is soaking into other areas: 12-step programs, Gaia/Goddess groups, you name it.)

But! Sometimes I just have to scream. Your magazine is full of sincere agonizing over exactly how many BBS's can fit on the head of a pin: that is to say, MDSDOS and its cousins. Do we go multi-node, or multi-line? Maybe both, with a LAN tangling them together? Or maybe we'll run a time-slicing BBS under Windows under OS/2? But then how will I put locks on the doors in my windows? Et cetera.

Unix is here. You all know that. It's even cheap ($99 for Coherent, for example, from Mark Williams Co., **(708)291-6700**, and no, I don't work for them!) and installable by mere mortals. It is the perfect platform for BBS's: multi-user, multi-tasking, and no need for "doors". Yet the myth seems to persist that "there aren't any applications for Unix", or "it's too hard to use", "too big for my hard disk", and so on.

I suggest that the general reluctance to consider Unix for BBS's is simpler; to wit: "My favorite application runs on MSDOS. Therefore all of my applications must run on MSDOS." Quod erat demonmsdos.

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Thanks for listening; keep up the good work!

Charles Roth

Charles:

There are three recurring myths in BBS land:

1. X.25 Networks
2. DESQview
3. Unix.

All have some modest application, and I've seen more BBS operators get in trouble with these three things than everything else combined. Nonetheless, hope springs eternal. As the hardware grows more powerful, we are going through yet another re-examination of both DESQview and UNIX. The temptation is almost overpowering, but I suspect the result will be as before.

For BBS operators, the allure of UNIX is of course the multitasking multiuser aspect. The overhead of such an all purpose operating system that accomplishes these two things is such that it virtually disqualifies itself. When UNIX afficionados discuss UNIX as a multiuser platform, they are visualizing a machine running processes at the behest of callers who are engaged in "transaction level" communications with the host. Writing messages. Providing input to programs. Viewing results produced by resident programs. Sure, you can do 16 or 20 lines of people reading and writing messages on a Unix machine.

When BBS operators talk about multiple lines, they are talking about something quite different. They are picturing 20 lines with all of them full of callers sucking files off the hard drive at the maximum achievable rate - today 14.4kbps. Downloading files is still the main sport on public bulletin boards. Even mail is moving "offline" as callers use offline mail readers to do their "transaction level" processing and the mail itself is downloaded as a file. A HOT 486 machine with Unix will fall to its knees and bark like a dog with six or seven simultaneous lines sucking files at high speed. You could perhaps run a LAN of UNIX machines with four or five lines on each 486 to some success. But the installation and operation of a LAN made up of Unix servers is a dauntingly complex task at this point. This is another situation where I would sooner try to suck start an Oldsmobile through the tailpipe.

But for some types of information service, I agree Unix is emerging with some application. Largely due to Internet connection issues, Unix is shaping up as the ultimate connection machine. It is enormously powerful in the variety of things you can do, and flexible to a fault. With some of the advanced BBS front ends we're seeing now such as COCONET, TEAMate, and ZMAX XCHANGE, the savageness of the Unix command line is finally being tamed with very attractive interfaces. So for some applications, UNIX is finding legs in the general BBS community. Mark Williams COHERENT efforts to bring low cost UNIX to the masses is particularly interesting. I think you can count on slightly increased coverage of these technologies in future issues of Boardwatch.

Jack Rickard

Dear Jack:

As an author by trade, sometime literary critic, and BOARDWATCH subscriber, let me be the first to "celebrate" Salman Rushdie within your earshot. By no stretch of the imagination is Salman Rushdie a "second-rate hack." His novel THE SATANIC VERSES is quite a good book, graceful, imaginative and very well-written. It's true that many people are anxious to kill Rushdie for writing this novel, but this controversy should not obscure his manifest first-rate abilities as an author.

Sincerely,

Bruce Sterling
bruces@well.sf.ca.us

Dear Bruce:

These are necessarily subjective issues. I read through the first 60 pages of ***The Satanic Verses*** *and confess I did not find it sufficiently interesting to finish the book. My point was that the book received much wider public exposure by virtue of the controversy than it would have achieved on its own merits. I could certainly be wrong and will happily defer to your greater familiarity with this genre. I'm not only not a literary critic, I'm so undiscerning as to read the backs of cereal boxes and try to decode subliminal messages from the patterns printed on toilet paper.*

I did however finish your own latest efforts - ***The Hacker Crackdown - Law and Disorder on the Electronic Frontier.*** *Frankly, I had feared the worst from this book as yet another publication from an instant expert on a hot topic. But it not only survived the 60 page test, I was stunned at the thorough level of both research and insight in this book. I learned a great deal I didn't know about Operation Sundevil and the events and issues surrounding it. More, your graphic command of the language and writing style is sufficiently readable to evoke my personal envy - in waves. Sign me up for the fan club.*

Jack Rickard

Dear Mr. Rickard:

After months of eager anticipation (and attempting to be one of the first to send in my ballot!), I was thrilled

to see that my favorite BBS, GLIB - The Gay and Lesbian Information Bureau, had placed in the top ten of Boardwatch Magazine's Top 100 Bulletin Boards. After reading your description of GLIB, however, I feel compelled to write and "set the record straight" so to speak.

As a contributing member of GLIB for over two years, and also a member of the straight/heterosexual community, I need to let you know that the description of GLIB as "a system strictly for gays and lesbians" is simply untrue. GLIB identifies itself as "an on-line information, communications, and support service for members of the lesbian, gay, and bisexual community, as well as others interested in and affirmative of those orientations. GLIB membership is open to any adult - regardless of their sexual orientation - who is supportive of the gay, lesbian, and bi community." My membership in GLIB is proof that this is true.

From the very first time I logged into GLIB through today, I have continually felt accepted and welcome as a member of the GLIB family. I am open online about my not being gay, but the fact that I am a heterosexual woman is secondary to the fact that I am supportive and care about my GLIB friends, as they are about me. I cannot speak for all of GLIB's heterosexual members - and there are others - but my experience with GLIB continues to be rewarding, entertaining, fun, informative, encouraging, emotional, educational, and much more - in short, all the things I look for in any group of which I am a part.

With it's widely-varied message bases, multi-line public and private real-time conference areas, myriad of wonderful information files, online magazines, games, and much, much more, I would be saddened if anyone missed out on all that GLIB has to offer because they mistakenly thought GLIB "didn't allow heterosexuals." It's just not true. There are so many unnecessary dividing lines between people these days - please let your readers know that GLIB is not one of them.

Sincerely;

Andrea M. Kojan
Arlington, Virginia

Dear Andrea:

Well, now that you've come out of the closet as a straight, heterosexual member, I would say you've clarified the matter more eloquently than I possibly ever could. My apologies to anyone who likewise took exception to my characterization of this system.

GLIB is probably a good example of why I deal with this issue in the fashion I do. I'm not gay, don't understand it, and have a terrifyingly small degree of interest in or familiarity with the whole topic. But Jon Larimore, sysop of this excellent bulletin board, has been an acquaintance and associate for nearly four years I guess. He's never been gay at me, although generally of good humor, and has always been ready and eager to experiment with online technology - about the only qualification necessary for a good reception around our offices.

As it so happens, GLIB is currently beta testing a product we are developing to link the TBBS message base with Internet mail - allowing GLIB callers to correspond with virtually any e-mail system worldwide. Jon has been consistently cheerful and supportive in testing what has been some pretty badly broken software - our Personal Internet Mail Processor (PIMP) for TBBS. And as a result of his efforts, at no small ongoing risk to the operation of GLIB, a number of pieces of "broken" have become whole. Today, GLIB callers are passing mail about the globe from this single BBS pretty handily from what I understand. It would have indeed been unfortunate if some "unnecessary dividing line" had prevented this collaboration - largely proving your point.

Jack Rickard

Dear Jack:

Just a quick note to compliment you, Phil Becker, and your team spearheaded by Peg Coniglio on the success of ONE BBSCON. I'm sorry for the delay in sharing our congratulations, but we began a move to new offices the day after our return from Denver.

The Business BBS appreciated the opportunity of participating in ONE BBSCON as both vendors and speakers. As a vendor, I found that the show was successful on many levels. We enjoyed meeting some of the major sysops from around the country. The show provided a great opportunity to make contact with and get feedback from corporate and individual online service users. We also took advantage of the opportunity to meet face to face with several third party vendors with whom we have been working. Using the technology is great, but it's no substitute for matchin a face with a voice and a name! Needless to say, we'll be back.

Based on the enthusiastic conversations and feedback following my presentation, it seems that there was more interest in the BBS as a service bureau than even I had anticipated. Both my partner, Susan Blook, and I would appreciate being considered as speakers for next year's show.

In closing, we would like to compliment ONE, INc. on its choice of Director in Peg Coniglio. Susan, who managed our participation in ONE BBSCON, foudn Peg to be one of the best show Directors going. Peg was helpful at every turn, professional, and always approached situations with a smile. We're sure that her efforts significantly contributed to

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the shows success for both vendors and participants.

Thanks again, on behalf of ourselves and the industry, for standing by your guns, vis-a-vis the COMDEX folks and for pulling together such a successful, professional event.

Sincerely,

Jim Appleby
President, The Business BBS

Jim:

I'm pleased you found ONE BBSCON useful and enjoyable. We are currently working on something for 1993 that I think will top it significantly. I'm pretty excited about it anyway. As soon as we have the site and date nailed down, we will be issuing a call for papers.

Peg Coniglio, and the people at Hoffman and Associates that helped put it together, are certainly a big part of why it worked. They'll all be back with us next year and I think we can up the level of the event yet a bit more.

Jack Rickard

Dear Jack:

I bought my first copy of Boardwatch recently. Native American issues interest me, and I use my modem to call Bulletin Boards, so naturally I was attracted to the colorful, full-cover photograph on your October 1992 issue.

When I looked for the "feature article", I was dismayed to find less than a page of poorly-written information containing only two telephone numbers. I felt cheated, but thought perhaps this may have been an uncharacteristic accident.

I read the other articles, and they were moderately good. Then I hit the "letters" section, and everything became clear. There I found an arrogant, right-wing editor who displays his faith in God like a prostitute wears make-up. Small wonder at the gaudy, deceptive cover...

Thanks for "flaming" your politics and religious attitude. Were it not for that, I might have bought Boardwatch again. I won't now, since I certainly wouldn't want someone like you to profit from my business.

Brian Freeman
Atlanta Georgia

Dear Brian:

No accident Brian. We put a lot of thought and work each month into making it poorly written and riddled with arrogance and makeup. Nonetheless, I'm heartbroken that you feel cheated and I'm sending you a check for $3.95 to make it right. That way I won't have profited from "your business." Since we're completely sold out of that particular issue (the gaudy, deceptive cover no doubt) and have less than a half-dozen copies left here at the office, please return it. We need it and are still getting requests for this issue.

Not that it will do any good. I would note that unfortunately you WILL in all probability buy another one. We seem to attract this little group of hate mongers who actually read more avidly than normal people. I've got a guy up in Maine who sends a vile, really horrible hate letter every year with a renewal check. Has every year we've published since 1987. I don't get it, but its part of life at Boardwatch.

You see the real challenge in a world where everyone seems to get about 60 pounds of mail a day, is to get read at all. There's so much in print, that people that really don't like what we do simply put us in the trash with the rest of the poundage and we never hear from them. You put enough venom in your letter to show your skirt. I doubt you'll miss an issue, as much as I'd like you to. My $3.95 will be back before I can do another issue. I've gone through this before and its like a bad penny.

Jack Rickard

Dear Jack:

Lots of water has gone over the dam since the first Sputnik launch and ONE BBSCON for me, (and the rest of the world!).

In the late 50's I was "commo Chief" for a MASH type Army Hospital. Sputnik had just went up and we were fascinated with the prospect of picking up the radio beacon. We had the right frequencies but were unsuccessful in receiving it. Instead we discovered some strange signals which were identified as Radio Teletype (RTTY). After a little research, some technical expediency and adaptations of a field teletype machine we were copying UPI and AP.

What an exciting discovery! Soon we were old pros at this state of the art news/text transmission stuff. We then found we could stop the machine after a "story" and add our own credible journalism. By this time, (being in the field supporting a large maneuver) we had created an "unofficial" local customer base.

We had created and were now filling a need. Our mixture of real and fabricated "news" was quite professional. Some of the "writers" on my "staff" were very creative.

Some gems come to mind: "CONGRESS APPROVES UNPRECEDENTED MILITARY PAY HIKE. STARTING XXXXX US. SOLDIERS WILL BE PAID ON PAR WITH CIVILIAN INDUSTRY." "DATELINE WASHINGTON, D.C. - TODAY THE SECRETARY OF THE ARMY ANNOUNCED THAT ALL ACTIVE DUTY MEMBERS WILL BE GIVEN THE OPTION OF IMMEDIATE DISCHARGE UNDER HONORABLE CONDI-

TIONS UPON WRITTEN REQUEST AND EFFECTIVE WITHIN 60 DAYS." - and other such press stoppers.

Not much time had passed when I heard from our Colonel. He "suggested" that we redirect our technical and artistic efforts back more in line with our job descriptions and restore the equipment to its intended use. I was out of the Off-line Misinformation System business.

I didn't get the "early out" but after finishing my tour, I embarked full force into the Space Age. In the thirty some years since, I have worked as an engineer on many major US space and Military projects; Tiros, Nimbus, Gemini, Apollo, Viking, F-14/Phoenix, MX and Navy Standard.

Over the years computers were just "tools" to me and I was generally ignorant of "BBSing" and the wide world of OIS. Early this year I renewed an old friendship with a fellow engineer. He was into designing modems. My interest was ignited. Soon I was on-line and having the time of my life discovering what you folks have been up to these many years.

August 92 found me at ONE BBSCON. I was among my people. You guys and gals are the early aviators and "ham" radio operators of the 20s and 30s. What an exciting three days I had. It tried to make every session, talked to every vendor at least twice, bought nearly every book, subscribed to Boardwatch for two years, bought my software (TBBS) and got on the airplane home with at least thirty pounds more baggage than I came with.

I had the great pleasure of meeting and listening to many of the BBS pioneers. I am "in" folks! On Nov 1 I'll be up and running a specialty board: Friendly Agricultural Resources Management Nework, FARM Net USA from Ventura California at (805)339-0945.

This is the perfect answer to a four year quest for a high tech product or service to bring to friends and relatives (and others) who farm and ranch for a living. The possibilities are staggering.

I'd like to offer the industry a "borrowed" slogan for the 90s; "Cooperation not Competition."

I called Dakota BBS (Boardwatch Oct.) what a beautiful, clean, snappy and useful board. I wish them great success. Incidentally, Rapid City is one of my boyhood hometowns.

In closing; Jack I too love god, I visit with him each morning and many times through the day. He answers back frequently.

Love your work with Boardwatch. Phil's and your two co-sessions at ONE BBSCON were definitely from the heart and right on.

Oh yes! I promise the users of FARM Net USA that I will not be disseminating spurious and fabricated information, even though I was involved with the early "MASH OMS" in 1958.

Warmest regards to you and your staff.

Bob Davis
Ventura, California.

Bob:

Well, no refund for you then. Seriously, I share your excitement and find your comparison of the people at ONE BBSCON to the pioneers of aviation and radio quite close to my own view of them. The story of your travels through an age of technology is fascinating and supports a theme I tell, but I sometimes think no one believes. The people that seem drawn to this medium tend to have extremely varied backgrounds and experiences similarly fascinating to your own. And while the modem channel does allow some communication, it is not always broad enough to convey the richness of the experience of the participants. Again, thousands of people working alone in basements.

ONE BBSCON was exciting because for the first time, a critical mass of them came to the same place at the same time and saw each other as people rather than names at the end of messages. Knowing they numbered in the millions, it was the first time they had ever SEEN a scant thousand in one place. And the result was explosive. We won't know for months what impact it actually will have.

Again, your story is fascinating and we appreciate you sharing it with our readers. FARM Net USA sounds fascinating. Please keep us posted with your progress.

73
Jack Rickard

TELEBITS

RUMORS AND TRIVIA

Playboy Magazine, flush from victory in their out-of-court settlement with **Event Horizons,** is planning their own online service. But they also appear to like the income derived from mauling bulletin boards through the legal mill. Rumor has it they have a hit list of systems carrying Playboy images and are NOT just asking that they be removed. George Frena's **Techs Wharehouse** in Florida **(904)268-7459** is rumored to have been hit with a subpoena for evidence as well as a filed complaint without any prior warning. Some believe Playboy has developed a BBS "hit list" and plan making BBS lawsuits a regular sideline business.

Prodigy continues to amass a fairly amazing concentration of users. The service is now up to **80,000** messages daily - with some **20,000** falling in a bulletin board they terms **ARTS CLUB**. The Arts Club features some **24** message conferences on various cultural/media items averaging over 800 messages each daily. Prodigy Services Co., 445 Hamilton Ave., White Plains, NY 10601; **(914)993-8892**

MEMORY CARD SLOTS - AN EMERGING TECHNOLOGY

One emerging technology you will likely hear a lot more about over the next year or so is the **Personal Computer Memory Card International Association (PCMCIA)** standard for a slotted receptacle originally intended for plug-in memory cards for notebook computers.

The most recent iteration of this **68**-pin connector standard is titled **PCMCIA II** and it describes a device **54.0** by **85.6** mm (**2.1** by **3.5** inches - about the size of a credit card) and **5** mm thick (**1/5** of an inch). More importantly, it expands the definition to include devices beyond simple memory and software applications. AT&T, for example, is currently selling a 14.4kbps V.32bis modem titled the **KeepInTouch** card and Data Race plans a similar modem introduction by year's end. Megahertz Corporation has announced the Megahertz **CC3144FM** Notebook FAX/Modem for the PCMCIA II slot featuring 14.4 kbps data and fax speeds. This spells the end of proprietary and correspondingly pricey internal modems for laptops. Meanwhile, Xircom is developing an Ethernet adapter for PCMCIA.

The orginal memory application is still going strong. Flash memory is a type of non-volatile RAM that operates much like a floppy. Intel has introduced a **20 MB** model for **$600.** Ultimately, as the price of these credit card sized memory modules comes down, these PCMCIA cards promise to be the next step in portable media. For many applications, the venerable 3.5-inch floppy disk technology, stalled out by the overwhelming number of installed units at 1.44 MB, provides inadequate capacity to transfer desktop publishing documents and other largish data sets. PCMCIA cards in 2.5MB, 5MB, 10MB, and 20MB offer an option - albeit currently an expensive one.

While currently offering maximum advantage to laptop, notebook, and sub-notebook models where weight and size are crucial, as it becomes ubiquitous in this arena the move into standard desktop hardware is inevitable. The standard is already strong enough that we would not consider purchasing a laptop computer without one, and preferably two of these slots. Keep an eye on this technology.

OXFORD ENGLISH DICTIONARY ON CD-ROM

The definitive dictionary of all time has to be the Oxford English Dictionary. Originally compiled in 1928, this dictionary consisted of ten volumes. A new edition was issued in 1989 and the second edition of this dictionary consists of **twenty volumes** weighing in at a stout **137** pounds of paper and costs over **$2500**. It lists **615,500** entries with some definitions as long as **60,000** words. The total is over **sixty million** words in length and includes nearly two and a half million quotations.

Oxford University Press has issued the latest work on CD-ROM titled the **OED2 CD-ROM**. At **$895**, the title is probably the ultimate application for CD technology. It's a couple of thousand dollars cheaper than the paper version, and actually offers more value with some powerful, if slightly awkward search software allowing searches and comparisons very nearly impossible to perform on the printed set. The program requires 4MB of RAM and Microsoft Windows 3.0 Oxford University Press, Electronic Publishing, 200 Madison Ave., New York, NY 10016; **(800)334-4249** or **(212)679-7300** voice.

NATIONWIDE PHONE BOOK ON CD-ROM

Directory assistance data has been available for some time from the local Bell telephone companies on CD-ROM. But the price has been ridiculously high - often as much as **$5000** making the product essentially unavailable to all but those needing it most desperately. The telcos were loathe to make it widely available because it might decrease use of their own directory assistance program - which has gone far beyond it's original "cost recovery" status to becoming an enormous profit center.

But recent court decisions have declared the white pages information produced by telephone companies as not protected by copyright. As a result, our access to this information should improve.

ProCD, Inc. has introduced a reasonably priced national telephone directory on CD-ROM. The product is titled ***ProPhone - National Edition.*** The product was announced September 10 with an introductory price of **$179.** But the company planned to make it available after September 30 at **$349**. Our experience has been that such stepup pricing doesn't usually hold, but it's possible.

ProPhone comes on three CD-ROMs - one for residences east of the Mississippi River, one for those west, and a third CD containing business

listings. The data is compressed and an accompanying software program performs searches for name or name fragments with delimiters for address, city, state, zip, and area code. The search is actually quite fast.

The program offers some interesting features, most notably a built in phone dialer. After performing a search, you can press a key and it will dial the number on screen. This is a bit like having a dialing directory with **80%** of the population already loaded into it. You can also print out a listing to a printer. The company claims you are buying the data and own it. They do have some restrictions on its use that are pretty interesting. You can use it on a "contiguous" network, but they appear deathly afraid of any online use - pretty much limiting its usefulness for bulletin boards if their restrictions are at all enforceable.

The business listings contain some **7 million** business entries, which the company claims is virtually all of them. This brings up an interesting possibility. While it wouldn't be foolproof, if you were trying to come up with a unique name for a business, you might do a search to find out if AAA Computers was really as unique as you thought it was. Obvious conflicts would turn up rather quickly, at no search fee.

The residential listings are previously published white page entries and contain no unpublished numbers. The program documentation notes that this is an inexact art as the listings for people in some areas of the country turn over as much as **25%** annually.

The real attraction to this program is somewhat non-obvious. After we got it up and running, it seemed like everyone here in the office had someone from their past that they wondered what ever happened to..... With this ProPhone, we were all entering names and searching for lost friends. Results were mixed. If they had a name like **Mongeon** or **Percibel** it worked quite well. A **Johnson** was hopeless. And there were anomalies. Searching for every **Rickard** in **Cape Girardeau Missouri**, didn't turn up anything at all. Since the town is reeking with them, I found this a little unlikely, until I found that for some reason **Cape Girardeau** was listed as **CPE GIRARDEAU**. So it can take some creative experimentation to get this program to sing for you. But it is a lot of fun. ProCD New Media Publishing, 8 Doaks Lane, Little Harbor, Marblehead, MA 01945; **(617)631-9200** voice; **(617)631-0810** fax.

WORKS OF LITERATURE CD-ROM OFFERS 2334 TITLES - $39.95

Walnut Creek CD ROM, the group that offers the **Simtel 20 MSDOS CD ROM** for just **$24.95** is working some new ground in establishing lower prices for CD ROM data collections. Their latest offering is titled ***Desktop Library*** and features **2334** works of literature at **$39.95**. The disk comprises a complete library of the best novels, short stories, plays, poems, and reference materials ever written. All files are ASCII text compatible with virtually any computer platform. The company claims it is the largest collection of literature ever published on CD-ROM. The CD includes the complete works of **Shakespeare,** the complete collection of **Sherlock Holmes** stories, the complete text of the **Bible**, the **Koran**, dictionaries, speeches, historical documents, Supreme Court decisions, and thousands of Internet text files. Walnut Creek CDROM, 1547 Palos Verdes Mall, Suite 260, Walnut Creek, CA 94596; **(800)786-9907** voice; **(510)947-5996** international; **(510)947-1644** fax.

ITALIAN VERSION OF GALACTICOMM'S MAJOR BBS NOW AVAILABLE

Studio 5 Liguria Servizi di Informatica of Albenga Italy has announced an all Italian version of Galacticomm's **MAJOR BBS** software product. The company has translated all prompts and the manual of this multiline BBS package to Italian and title the product **SistemaTelematico GALACTICOMM**. They offer the Edizione Standard, the Edizione Menu Manager, and the Edizione Servizi di Libreria along with Servizi Dial Out and other add-on products. They also invite any third party developers of add-on products to contact them regarding marketing agreements in Italy. Studio 5 Liguria s.r.l. Servizi di Informatica, 17031 Albenga (Sv), Via Pap Giovanni XXIII, 162/1; **0182-540200** voice; **0182-543977** fax; **0182-554965** BBS.

ATT 14.4KBPS CHIPSET

AT&T Microelectronics has announced a low-power modem chip set for use with laptop computers. The new **V.32bis Data Pump Chip Set** performs both fax and data functions at up to 14,400 bps and will be available during the first quarter of 1993 at **$79** in quantities of **10,000**. **(800)372-2447.**

A DAY IN COURT FOR HAYES OVER ESCAPE SEQUENCE

The legal imbroglio surrounding Hayes Microcomputer Products' advertising campaign dealing with escape sequences is beginning to clear a bit, although with mixed results. Recall that Hayes had run a ticking time bomb advertisement to call attention to the fact that some modem manufacturers were using

escape sequences of their own design rather than licensing the Heatherington "improved escape sequence with guard time" from Hayes. Most notably the TIES escape sequence. Hayes offered a test kit that would cause these modems to escape to command mode if you attempted to transfer the file.

Sierra Semiconductor Corporation and Multi-Tech Systems Inc. had each filed suit seeking to stop the ads and stop Hayes from offering a test kit that caused modems using the competing Time Independent Escape Sequence (TIES) to escape to command mode.

The results were a bit mixed. Hayes was enjoined from using the ticking time bomb metaphor and also enjoined from implying that data could actually be damaged or destroyed. But the court upheld Hayes' right to offer the test kit and compare the effectiveness of the TIES escape sequence to the Hayes patent. As a result, Hayes has resumed advertisement and offers a slightly redesigned version of the test program.

The test program simply contains TIES escape sequences that DO cause the modems to escape to command mode. And while these escape sequences could cause problems if found in user data (the file simply would escape to command mode during transmission - aborting the transfer), the odds of its occuring there are extremely remote. Both sides of the dispute claimed victory.

The test kit is available by request or for download from the Hayes support board at **800-US HAYES**. Hayes Microcomputer Products, Inc. PO Box 105203, Atlanta, GA 30348; **(404)840-9200**.

U.S. ROBOTICS SPORTSTER 14400 - AN UNINTENDED BARGAIN

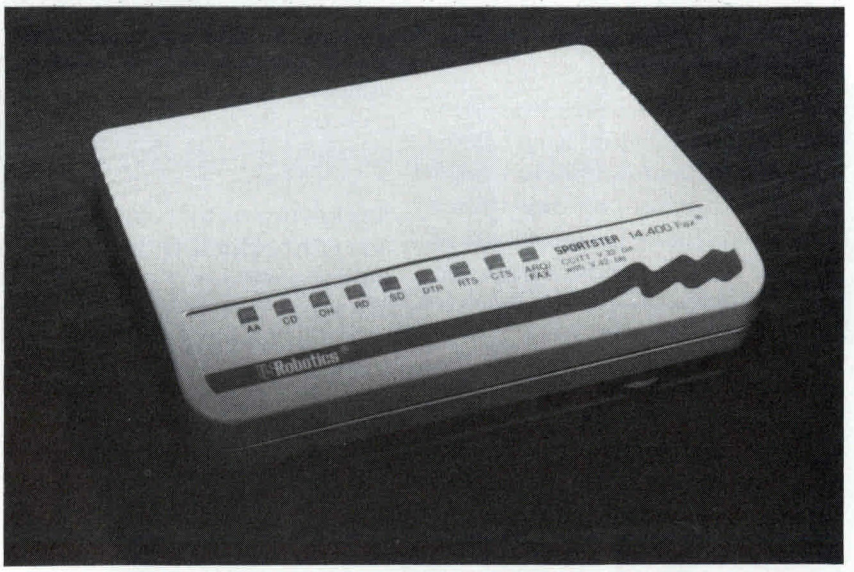
Modem manufacturer U.S. Robotics has long offered two classes of modems, the **Courier** and the **Sportster** lines. Courier is the top of the line modem and within the BBS community is considered one of the top models available. Sportster modems were typically the ugly little brother - at a much more economical price.

The company recently released some new Sportster models that have an allure. The **Sportster 14000** and **Sportster 14000 with Fax** offer CCITT V.32bis connections at 14,400 bps, V.42 and V.42bis error correction and compression, Microcom Networking Protocol (MNP) level 5 compatibility, and in the case of the fax model - 9600 bps fax. The modems are listed at **$519** and **$549** respectively - actually not terribly competitive in the economy class for modems with this functionality. But Sportsters are almost designed to be discounted and these are available on the street at around **$290** which is quite competitive.

The main difference between the Sportster models and the Courier models in this case is the case. The Courier features a very nice black plastic case suitable for framing. The Sportster looks like nothing so much as a Radio Shack home intercomm. You are almost drawn to press a switch, lean over to speak into it, and ask mom for some juice with this thing.

But under the hood lies more modem than even U.S. Robotics apparently intended. The modem motherboard within is not similar to the **$1295 Courier Dual Standard**, it actually **IS** the Courier Dual Standard motherboard. The Courier Dual Standard of course, in addition to the 14.4kbps V.32bis mode, features a **16.8kbps** proprietary **HST** (High Speed Technology) mode, a really nice case, an ASL mode, and a list price of **$1295**. We obtained data transfer rates as high as **1885 cps** with this top of the line model and reviewed it very favorably in our October issue.

The reasons for this are fairly understandable. It is actually cheaper to manufacture lots of a single motherboard than two different motherboards. And by repackaging



U.S. Robotics Sportster 14.4 With Fax

Eight lines, one computer...

No problem.

Introducing Wildcat! IM The new 'Intelligent Multi-Port' version of WILDCAT! is a special release designed for BBS installations requiring up to 8 incoming lines on a single PC, with or without LAN connectivity. Multiple PCs of 8 lines each can be connected in a LAN setting, up to the maximum of 250 nodes. WILDCAT! 'IM' shares all the features and functionality of the rest of the WILDCAT! product line, while taking advantage of the most popular intelligent multi-port serial cards in the industry, the DigiChannel COM/8i, PC/8e or PC/8i.

More Than Just 8 Lines The eight-line per PC capabilities of WILDCAT! IM are just the beginning. In a LAN setting you can set up multiple 8-line systems combined with local connectivity for all your network users. A 16 or even 32 line BBS now takes only a fraction of the space required previously, and adds the convenience of local LAN access.

Wildcat! IM Packages WILDCAT! IM is only available in a 250 node configuration, and is priced at $799. A special WILDCAT! IM+ package, which includes WILDCAT! IM software, DESQview 386/QEMM and a DigiChannel COM/8i serial card and cable, is package priced at $1,999.

Another breakthrough from the programmers at MSI

SYSTEM REQUIREMENTS:

COMPUTER
An 80386/33 is the minimum system required for operation. As the number of BBS lines and line speeds increase, faster processing may be needed. An 80486 system will operate all eight lines at full throughput, even with the newest high-speed modems.

MEMORY
A minimum of 8MB of RAM is required. To improve file access speed, additional RAM can be utilized for virtual RAM drives and disk cache.

MULTI-PORT BOARD
The WILDCAT! IM version is specifically designed to operate with intelligent serial port cards from Digi International, Inc. The DigiChannel COM/8i, PC/8e or PC/8i cards make use of on-board microprocessor support for communication activities.

MULTI-TASKING
The multi-tasking chores on a WILDCAT! IM installation are handled by DESQview 386 from Quarterdeck Office Systems.

MSI
MUSTANG SOFTWARE INC.

See your local software dealer or call MSI at 800-999-9619 for product information.

Mustang Software, Inc.
P.O. Box 2264 Bakersfield, CA 93303

SYSOP MODEM DISCOUNT PROGRAMS

V.32 and V.32bis Modems

VENDOR	MODEL	LIST	SYSOP	BBS	VOICE	FAX
ATI Technologies	ATI V.32	$699	$350	416-756-4591	416-756-0718	None
Cardinal Technologies	9600V42 V.32	$699	$269	717-293-3074	717-293-3000	None
Computer Peripherals	Viva 9624e V.32	$349	$249	805-499-9646	805-499-5751	805-498-8306
Galaxy Networks	UFO V.32bis	$999	$299	None	818-998-7851	818-998-1758
GVC Technologies	FM-9696/144V V.32bis	$689	$413	201-579-2380	201-579-3630	201-579-2702
GVC Technologies	SM-96V V.32	$599	$329	201-579-2380	201-579-3630	201-579-2702
Hayes Microcomputer	Ultra 144 V.32bis	$1199	$599	404-446-6336	404-840-9200	404-449-0087
Hayes Microcomputer	Optima 144+Fax	$499	$299	404-446-6336	404-840-9200	404-449-0087
Hayes Microcomputer	ISDN System Adapter	$1599	$799	404-446-6336	404-840-9200	404-449-0087
Image Communications	Twincomm 9600 V.32	$299	$279	None	201-935-8880	201-935-6548
Intel Corporation	14.4EX V.32bis	$549	$269	503-645-6275	503-629-7000	503-228-9707
Intel Corporation	9600EX V.32	$599	$299	503-645-6275	503-629-7000	503-228-9707
Multi-Tech Systems	MT932BA V.32	$869	$435	612-785-9875	612-785-3500	612-785-9874
Multi-Tech Systems	MT1432BA V.32bis	$899	$450	612-785-9875	612-785-3500	612-785-9874
Practical Peripherals	PM14400FXSA V.32bis	$549	$250	805-496-4445	818-706-0333	818-706-2474
Supra Corporation	SupraFAX V.32bis	$399	$249	503-967-2444	503-967-2400	503-967-2401
Supra Corporation	SupraFAX V.32	$299	$199	503-967-2444	503-967-2400	503-967-2401
Telebit Corporation	T3000 V.32bis	$949	$399	None	408-734-4333	408-734-3333
U.S. Robotics	HST/DS V.32bis	$1295	$449	708-982-5092	708-982-5010	None
Ven-Tel	EC96 V.32	$699	$439	408-922-0988	408-436-7400	408-436-7451
ZyXEL	U-1496 V.32bis	$799	$450	714-693-0762	714-693-0804	714-693-0705
ZyXEL	U-1496E V.32bis	$469	$299	714-693-0762	714-693-0804	714-693-0705

it in a downscale case and disabling a few features, you can reach an entirely different market segment without a lot of retooling.

The difference in features is a function of the operating software held in **R**ead-**O**nly-**M**emory (**ROM**) chips on the modem motherboard. But on a large number of early shipments of the Sportster, the code is still in the ROMs, and can be reactivated with simple **AT** commands to give the lightweight Sportster the **16.8Kbps** mode that is the most notable function of the Courier power house. It does not appear to add the ASL function.

To see if your model supports this, enter the command **ATI7** to display the ROM version. At the bottom of the display, you should see an entry for **SUPERVISOR VER 4.1** or **SUPERVISOR VER 4.2.** It will also list an **OPTIONS V32** entry. If your ROM indicates **SUPERVISOR VER 4.1**, you win the USR Sweepstakes. Enter the command **AT GW 03C6,22 GW 05CD,2F** and again enter **ATI7**. The options entry should now read **OPTIONS HST,V32**. This means you can now use the 16.8kbps HST mode. The **ATB1** command will turn it on. And if you dial a BBS with a Courier Dual Standard, you will get a **16800/ARQ** connect.

Currently shipping models of the Sportster have a version **4.2** ROM and the command doesn't work. Merry Christmas from U.S. Robotics. Rumor has it there are some very unhappy campers within USR over this marketing faux pas. We don't get it. So some USR customers got a good deal - that's got to be terrible PR right?

Apparently USR is determined to turn it into a negative one way or another. The company has issued a fairly artless written IMPORTANT WARNING TO BULLETIN BOARD USERS quoting chapter and verse of U.S. copyright law. We produce the full text of this warning here:

"IMPORTANT WARNING TO BULLETIN BOARD USERS:

It has recently come to our attention that some bulletin board operators and other third parties have been improperly distributing copyrighted firmware that will add USR's proprietary "HST" protocol to USR "Sportster" modems without having to compensate USR for the conversion. Some of these persons have further been telling customers that if such a conversion is made, it will not adversely affect the customer's right to warranty service from USR.

USR has not authorized the dis-

semination of this firmware. The Company considers any such attempts to improperly incorporate copyrighted "HST" features into non-HST modems to be a clear infringement of USR's rights under Federal Copyright Law. Persons contemplating such action should be aware that the Copyright Act of 1976 provides stiff remedies for acts of copyright infringement, including the impounding of all infringing copies, monetary damages, special statutory damages, costs, attorney fees, and even potential criminal liability. 17 U.S.C. Secs. 502-506. USR will take whatever steps it deems necessary to protect its copyright rights. In addition, USR's warranty will not extend to products that have been tampered with in this manner.

Also, please note that it has also come to our attention that versions of the firmware being disseminated contain disguised code ("Trojan Horse") that may inflict irreparable damage to the hard drive of the computer utilizing the programs.

We regret the necessity of having to post this warning. Please understand that USR has spent considerable time, effort and money to research and develop the software embodied in its products. Like any manufacturer, we cannot simply sit back and tolerate attempts to misappropriate our copyrighted programs in this manner. U.S. Robotics, Inc."

We haven't been able to locate anything remotely resembling USR firmware online. If it did exist, it would be a copy of the ROM code in the Dual Standard ROM and could not conceivably even be run on an **80x86** microprocessor, much less operate as a Trojan Horse. It would be data that garage-shop pirates would use to create unauthorized copies of the ROM using an **E**lectrically **P**rogrammable **R**ead **O**nly **M**emory (**EPROM**) programming device. This would be put in the Sportster to convert it to a Courier Dual Standard. This would certainly be copyright violation, and we cannot condone it in any form. But it disqualifies itself as a candidate for a Trojan Horse program quite thoroughly.

The only file we can find online even remotely relating to this warning is a tiny **24KB** program titled **USRPATCH.ZIP**. It appears to come from Johan Franzn of **Twilight Garden BBS** at **46-8-510-50925** (FidoNet **2:201/258**). The program is apparently authored by "Jeffe and Alex" who credit Henrik Johansson with the discovery. It appears to simply send the **AT** command previously described to the modem from the DOS command line. In this way, you can run the program, and then your terminal program, and not have to enter the **AT** command at all each time you use the modem.

We are thoroughly confused by U.S. Robotics' warning. And any attempt to talk to anyone within the company leads to a lot of finger pointing and referral to other telephone numbers in an essentially endless fashion. First, the program does nothing more than send the **AT** commands to the modem and U.S. Robotics "copyright" to **AT** commands of any sort is openly questionable. Secondly, there is nothing we can find wrong with this file, and the question of a Trojan Horse program appears to be blatantly transparent fear mongering of the worst sort. In fact, the concept of a software program causing "irreparable damage to a hard drive mechanism is ludicrous. The most virulent viruses and most damaging Trojan Horse programs can only damage data on hard disk drives - not the hard disk drives themselves. This is officially and totally utter nonsense. It was undoubtedly drafted by a lawyer to the ongoing chagrin and mortified embarrassment of every technical person within this fine company.

We understand their distress. And we'll shed no tears for anyone running garage shop EPROM mills that might be prosecuted. But technically ridiculous warning messages do nothing but call into question the credibility of USR itself. Trying to "scare" users into NOT entering simple commands to make the modem they bought and paid for more capable doesn't even make sense from a marketing standpoint. And lost in the confusion is the fact that their "Radio Shack Intercomm" model is actually a dynamite little modem on its own merits, at a reasonable price. That a few of the early buyers of this modem got a good deal, can only work to U.S. Robotics benefit - if they don't work too hard to turn it into a negative.

There were rumors of plans within the company to introduce a BBS operator discount price on this Sportster model of as little as **$279** - which would have been quite exciting. The current imbroglio has probably delayed this move if indeed those were the plans. U.S. Robotics, Inc. 8100 North McCormick Blvd., Skokie, IL 60076; **(708)982-5010** voice; **(708)982-5092** BBS.

TELIX SOLD

Telix, a popular shareware terminal communications program, has been sold effective September 25th. Jeff Woods, former Exis, Inc. Technical Support Manager purchased the program source code, trademark, and future sales for an undisclosed sum. Woods is forming a new company to market the product titled deltaComm Development, located in Cary, North Carolina.

Telix is the second most popular terminal program used on bulletin boards around the country with about a **20%** market share - behind

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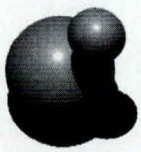

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	Class-B	300/1200/2400	120+	$2.50	$6.00	M-F 8am-8pm ET
	Class-96	9600	30	$2.95	$3.95	M-F 8am-6pm ET
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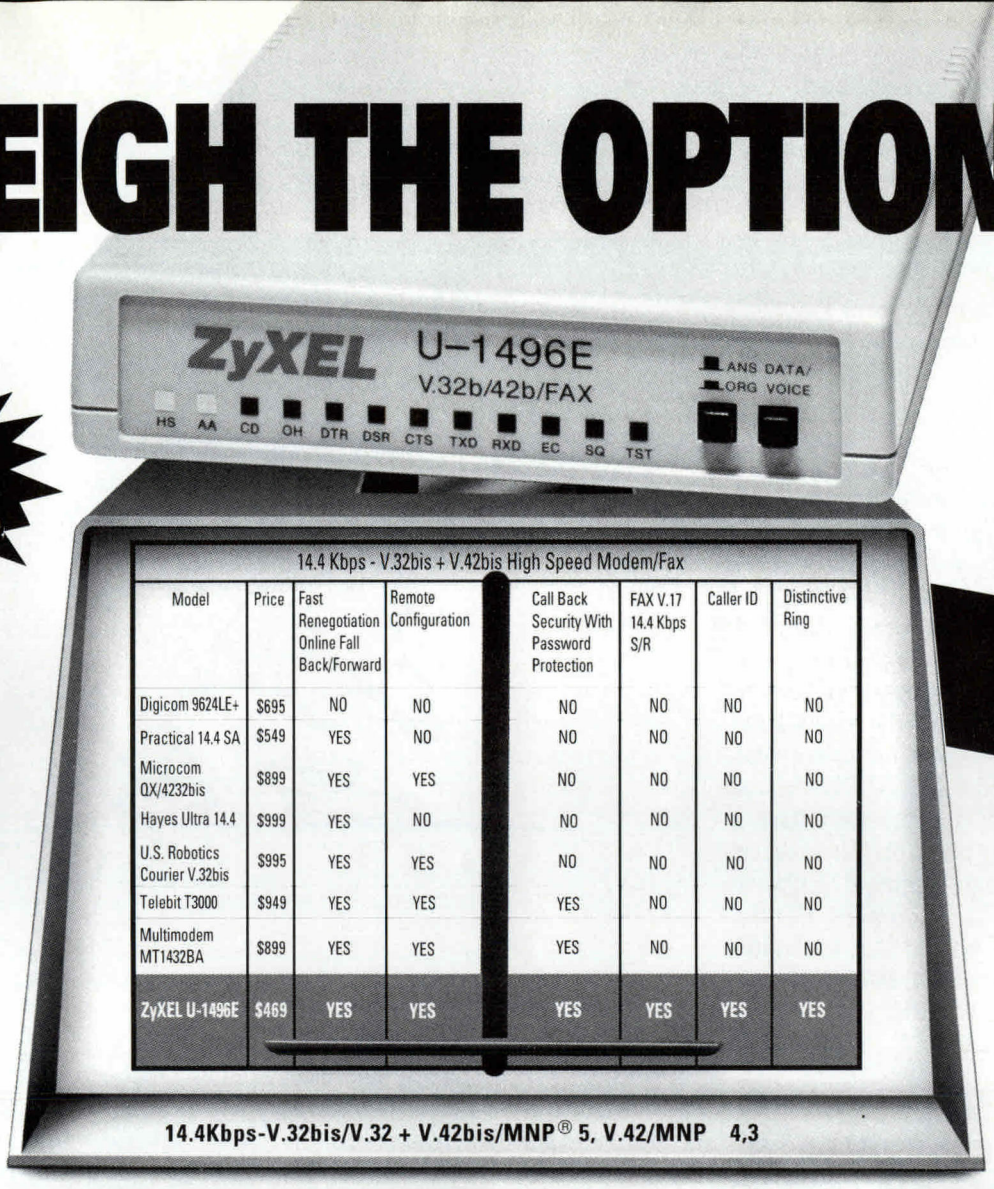

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Microcom QX/4232bis	$899	YES	YES	NO	NO	NO	NO
Hayes Ultra 14.4	$999	YES	NO	NO	NO	NO	NO
U.S. Robotics Courier V.32bis	$995	YES	YES	NO	NO	NO	NO
Telebit T3000	$949	YES	YES	YES	NO	NO	NO
Multimodem MT1432BA	$899	YES	YES	YES	NO	NO	NO
ZyXEL U-1496E	**$469**	**YES**	**YES**	**YES**	**YES**	**YES**	**YES**

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Comparison chart was completed in May, 1992.

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DataStorm Techologie's popular Procomm product used by nearly a third of those in the BBS community.

The chief programmer of Telix was Colin Sampaleanu, who will remain with Exis, Inc. working on other projects.

According to Woods, a new minor upgrade to the product will be available before the end of the year. The new upgrade will include a script learning mode and ANSI music capabilities. Woods notes that this will be the LAST shareware release of Telix. Two more major versions of Telix will be released in early 1993, including versions for other platforms beyond the IBM PC - but all will be strictly commercial software. The company plans on initial distribution through Egghead Software. deltaComm Development, PO Box 1185, Cary, NC 27512; **(919)460-4556** voice; **(919)460-4531** fax; **(919)481-9399** BBS.

OFFLINE MAIL - SLASHING PHONE BILLS WITH SPARKY HERRING'S QWK MAIL READERS

Central to the woof and lore of the development of electronic bulletin boards is money - how to do more communicating with less money. Most of the developments in bulletin boards were not firsts. It wasn't that no one had done it before, it was more that no one had done it before that cheaply, and so for most of the world it wasn't doable. Running a time sharing service on a million dollars worth of hardware was not in and of itself an accomplishment. But only a handful of humans had the opportunity to do so. Doing even a distant approximation of the same thing on a $2000 personal computer was remarkable not that it was technically superior or even similar. It is remarkable in that it can be done on a $2000 computer. And many of the early BBS systems were pieced together from discarded parts of $2000 computers that the sysop actually had more on the order of several hundred dollars total hard cash investment in - and a lot of work.

And one of the fundamental costs ever under attack by the BBS community is telephone costs. FidoNet was born to some degree because Tom Jennings didn't like paying long distance telephone bills. The original concept was to pass mail in batches in the wee hours of the morning when rates were lowest.

For many BBS callers, dialing a local BBS costs precisely zero dollars and zero cents. They are dialing a local number with no toll charges by the minute. But we were a bit surprised to learn from the 1992 **Boardwatch 100 Reader's Choice Contest** that some **27%** of all those voting, nominated a BBS in a DIFFERENT area code from their own as their favorite system. And while we have no way of measuring caller activity long distance within the SAME area code, we have to believe that at least half the calling activity in BBSland is actually long distance - on the clock so to speak.

Have most of the BBS callers in the country won the lottery and thrown thrift out the window? Not precisely. But increasingly, they are actively participating on distant bulletin boards at very minimal costs. They're doing this with offline mail readers.

The basic operation is fairly straight forward. Callers access a door program on their favorite BBS and "setup" by selecting the message conferences they wish to participate in. Thereafter, each time they call, they can access the door and it will pack up all relevant messages from those conferences into a single compressed archive packet, usually with the **PKZIP** program but with others as well. The caller then down-

loads the packet and disconnects from the system. The packet contains all unread messages from all the conferences they have selected.

The caller then uncompresses the **.QWK** archive and uses an offline mail reader to browse, search, read, and respond to messages in any of the selected conferences. The offline mail reader functions as a combination message base and message editor, allowing the caller to get the feeling of being ON the BBS, but actually completely disconnected. When they're finished, the offline mail reader creates another packet containing any replies entered. The caller then dials back to the BBS, and uploads the reply packet through the QMail door program. The door then inserts the replies into the actual message base on the bulletin board.

The net effect is that with a telephone call spanning just a few minutes to download a packet, and another even shorter telephone call to upload replies, callers can participate in hundreds of message conferences with the same dispatch as being on the board for hours. Actually, the offline mail readers have progressed at this point to where the caller has more tools, including spelling checkers, use of their own editor or word processor, and various storage, search, and printing options just not available on the BBS itself. In this way, a caller can do mail with BBSs anywhere in the country at a tiny fraction of the cost of being "live" on the system.

How did all of this get started? Mark Herring, dubbed "Sparky" by a Radio Shack manager he was doing some consulting work for a number of years ago, developed the first offline mail reader widely used in the BBS community. A Memphis computer consultant, Herring was moderately active on bulletin board systems in 1987. A friend of his, Dan Mascheck, relocated from Memphis to Wharton Texas - some 60 miles outside of Houston. Mascheck regularly called the bulletin boards in Memphis to stay in touch and complained about the long distance bills he was incurring in doing so.

Herring had earlier done some work on a networking program for PCBoard BBS systems titled PCBEcho. So he told Mascheck he would see what he could work up for him. The result was a combination of a door program for PCBoard and a stand alone utility callers could use to dial in and fetch packets of mail from the door program. He titled it QMail. And it rather caught on.

According to Herring, life since then has held several surprises. "First, I spent all of 30 minutes on the **.QWK** file format used by QMail. If I had known it would catch on the way it has, I might have done a lot of things differently. Second, I thought the entire universe for this program was maybe 40 copies."

By the time he released the **QMail Reader** and **QMail Door** on **April 15, 1988**, he already had **32** orders in hand from enthusiastic BBS operators. Since then, over **15,000** users have REGISTERED a copy of **QMail.** The **.QWK** door and file format have been used to develop entire BBS networks - originally Interlink (later renamed ILINK). And there are now probably **50** different programs purporting to be the ultimate **.QWK** offline mail reader.

As best we can tell, the top five mail readers remain **QMail/QMail Deluxe, Silly Little Mail Reader** and it's successor **OLX, EZ-Reader, 1stReader**, and **WinQuick**.

Silly Little Mail Reader, abbreviated **SLMR** and pronounced "SLIMER" registered some **2400** users as a shareware product. It was originally written by Greg Hewgill, who sold the product to Mustang Software Inc. and in fact joined the company. Today, the successor to SLMR, titled **OLX**, is packaged with Mustang's **Qmodem Pro** terminal program.

Typically, offline mail readers do none of the actual chores of communicating with the BBS. A separate terminal program is used to download **.QWK** packets and upload **.REP** reply packets. And usually, the compress/uncompress function is performed by a separate utility such as **PKZIP** as well. For new callers, the combination of terminal programs, mail fetch scripts, compression utilities, and the offline mail reader itself, can be a little daunting to setup - not terribly difficult, but containing a number of components.

Herring wanted to get his father involved in mail conferences, but realized that for the only casually interested, the barriers to getting online were too troublesome. "Until we realize that most of the world is not going through all this to be on a bulletin board, we're going to be left with just us byte heads holding flaming wars online.", claims Herring. His attempt at simplifying the process is the latest Sparkware release - **1st Reader**. The program contains the terminal program - with a script language, built-in **ZMODEM** file transfers, and built-in compression software to deal with **ZIP** files. **1st Reader**, released just this year, is already estimated to rank fourth in all time offline mail reader sales at a list price of **$25.**

There is a test drive version of 1st Reader available in the files **1ST-101A.ZIP** and **1ST-101B.ZIP**. The program is rather seriously crippled in that it is limited to reading only **20** messages per conference, and on exit rather forcefully tries to get you to dial Sparky's BBS at **(615)230-8822** to register the program. His original **QMail Deluxe 2** product remains popular and is available in the file **D2-125.ZIP.**

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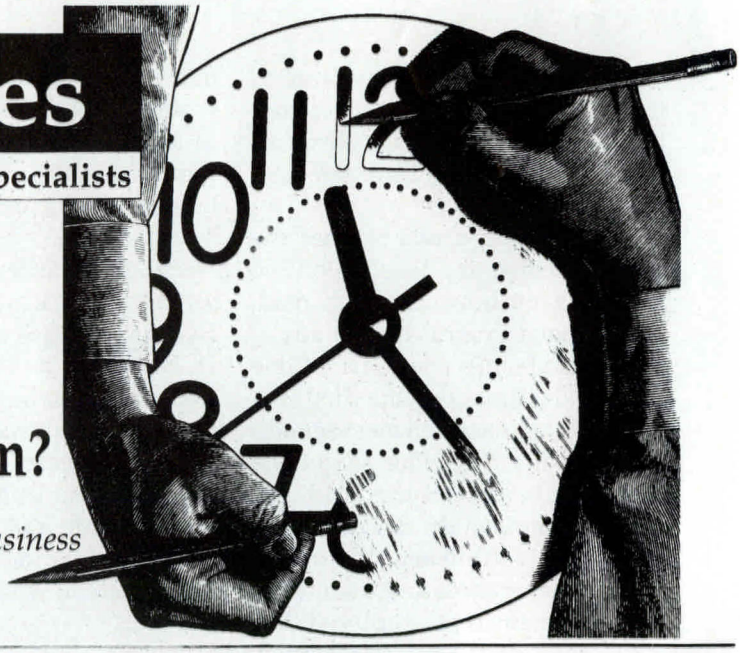

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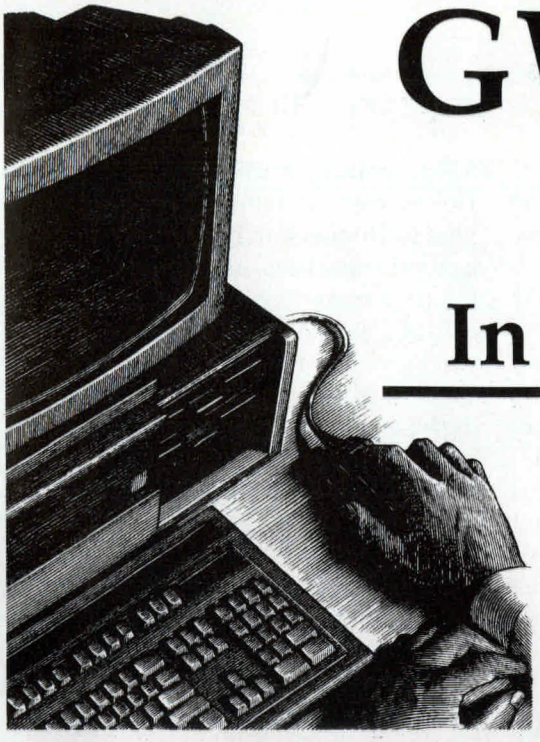

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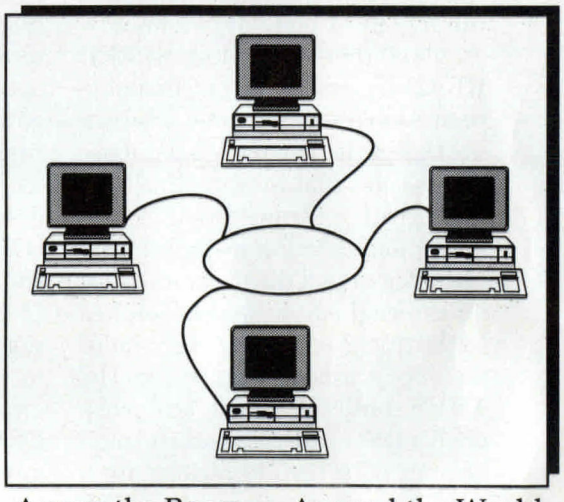

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Design & Layout by AQUILA BBS voice (708) 820-0480

Nonetheless, the program is catching on and many BBS operators are including it in the price of a subscription. Since all the components needed are in one package, it takes less explanation for them to get callers up and using offline mail readers. From the sysops point of view, many of the early systems in the early days of offline mail only had a node or two. By moving callers to offline mail readers, they could accommodate more callers on fewer telephone lines. And that economic incentive continues to this day.

But offline mail readers closely resemble word processors or text editors in that choosing one is a very personal decision and the subject of "which one is best" can be the source of endless fiery debate. There are nearly **50** current titles available for download and each has its following of loyal users. In addition to the five most popular, we found a couple of others interesting. **SPEED READ** by Jim Smith of Birmingham Alabama does some interesting things. It is actually a database of messages that works in itself like a BBS with message threading, expiring and deleting messages that are older than X days, allows use of an external editor, and as implied by the title, it is very fast. In handles message threading much like the **TBBS** bulletin board and with eSoft's **QSO option module** mail door in beta test, is picking up a quick following among the TBBS crowd. A comer in the online world seems to be **BLUE WAVE**, which is loaded with every "feature" an offline power user could want. Vic Kass of Rose Media in Willowdale Ontario offers a powerful program titled **RoseReader** and an accompanying **RoseMail Door** program for PCBoard systems.

The popularity of the **.QWK** mail readers has a down side. The original **.QWK** packet specification, by Herring's own admission took up a scant 30 minutes of his life in creation. There was no way of knowing at the time that entire networks and hundreds of thousands of users would put it into play. It was patterned after the way PCBoard handles messages. It has expanded over time to include file downloads, bulletins, news files, and other goodies aside from just mail. But the **TO** and **FROM** fields remain limited to a scant **25** characters in length. And Herring himself plans to expand the **.QWK** standard to accommodate such things as graphics, sound, NAPLPS, and other multimedia type enhancements. This coming **QWK 2** specification could significantly expand the use of offline mail for many other functions.

Internet mail, for example, has posed some problems. Herring did an Internet mail package for PCBoard systems marketed through Canada Remote Systems. One of the problems faced was that many Internet domain name system e-mail addresses exceed **25** characters. The way this was handled is with an optional address line as the first line of a message. Any message with **TO:** and a domain name address in the first line of the message is treated as if the first line address supercedes anything in the actual 25-character **TO** field of the message. The problem this brings up is in replies. You can't just press **R** and have the mailer capture the **FROM** address as a **TO** address, it must be laboriously re-entered by hand on the first line of the message. In his own **1st Reader**, Herring handles this using TO field macros. If you enter **@U-FROM@** in the **TO** field, the reader automatically scans the message for the **From:** address and formats a **TO:** line in the reply for you. It's a bit of a kludge, but it works.

For Herring, QMail has changed a lot of things. His consulting practice has devolved to taking care of a couple of loyal customers who depend on him. He works full time as the developer of his shareware line, which also now includes utility programs allowing BBS operators to offer **FAX e-mail** and one program that will forward BBS messages to a **Motorola alphanumeric pager.** He's moved his family from Memphis to Hendersonville Tennessee, a picturesque rural setting some 25 minutes north of Nashville in pursuit of a better quality of life. He works from home, developing shareware products and supporting his customer base. A **700** square foot office adjoining his home houses **Sparkware**. And he seems to be having altogether too much fun to call it work. Mark Herring, Sparkware, PO Box 636, Hendersonville, TN 37077; **(615)230-6245** voice; **(615)230-8822** BBS.

The accompanying table lists a sampling of some of the more popular offline mail readers and their file names. Readers are available for PC, Macintosh, Amiga, Atari ST, UNIX, and even CP/M machines incredibly enough. These are available widely on bulletin boards everywhere. Subscribers to the Boardwatch BBS can download most of these from our system at **(303)973-4222**. We are currently beta testing eSoft's **QSO** Option Module to allow offline mail experimentation. But there currently appears to be about **50** of these readers available and a gentleman in Texas named **Patrick Y. Lee** appears to have taken it as a mission in life to actually track all of these, who the authors are, the latest versions, etc. He posts the resulting list of readers, door programs, etc. in an extensive file titled **QWKPyymm.ZIP** where **YY** is the year and **MM** is the month. The file is updated monthly and available from the **Aardvark BBS** at **(212)496-8324**. Lee can be reached by e-mail at **p.lee@green.cooper.edu** or **patrick1@dorsai.com**.

OFFLINE MAIL READERS

A Sampling of .QWK Format Offline Readers for Various Platforms

IBM PC

1stReader v1.01
1ST-101A.ZIP
1ST-101B.ZIP
Mark Herring
Sparkware
PO Box 386
Hendersonville, TN 37077
Voice (615)230-6245
BBS (615)230-8822

Blue Wave v2.10
BWAVE210.ZIP
Geroge Hatchew
Cutting Edge Computing
PO Box 90476
Burton, MI 48509
Voice (313)743-9283
BBS (313)743-8464

EZ-Reader 1.39
EZ139.ZIP
Eric Cockrell
Thumper Technologies
PO Box 471346
Tulsa, OK 74147
BBS (918)355-4409

Jabber v1.2
JABR12.ZIP
Mark Della
Della & Muegge Enterprises
PO Box 4251
Santa Rosa, CA 95402
BBS (707)575-0636

KingQWK v1.05
KQWK105.ZIP
Mike King
PO Box 4020
Alameda, CA 94501
BBS (510)865-7115

MegaMail Reader v2.10
MEGAR210.ZIP
Kip Compton
PO Box 206
MIT Branch
Cambridge, MA 02139
BBS (617)494-1366

OFFLINE v1.42
OFFLI142.ZIP
Harvey Parisien
PO Box 323, Station "A"
Kingston, ON K7M 6R2 Canada
BBS (613)389-3992

OLX v2.2
OLX-TD.ZIP
Mustang Software, Inc.
PO Box 2264
Bakersfield, CA 93303
Voice (805)395-0223
BBS (805)395-0650

Orator v1.0.9 for Windows
ORATOR.ZIP
Nick Dyer
EvaWare UK
5 Grosvenor Court
Louth, Lincolnshire LN11 9LT
England

Power-QWK v2.15
PQ215.ZIP
Gale Green
Powerline Systems
44 Rydal Way
Ruislip, Middlesex HA4 0RU
england
BBS 44-81-841-1847

QMail Delux 2 V 1.25
D2-125.ZIP
D2_125DX.ZIP
Mark Herring
Sparkware
PO Box 386
Hendersonville, TN 37077
Voice (615)230-6245
BBS (615)230-8822

Rose Reader v1.70
!RR170A.ZIP
!RR170B.ZIP
!RR170C.ZIP
!RR170D.ZIP
Vic Kass
Rose Media Inc
PO Box 345, Station "A"
Willowdale, ON M2N 5S9
Canada
Voice (416)731-8805
BBS (416)733-2285

Session Manager 1.06
SM106_N.ZIP
SM106_O.ZIP
SMQI106.ZIP
Patrick Hart
Exchange Computers
333 Office Square Ln, Suite 103
Virginia Beach, VA 23462
Voice (804)552-1009
BBS (804)552-1010

Silver Xpress v3.01
SXR301.ZIP
Hector Santos
Santronics Software
1451 Plymouth Ave.
Irwin, PA 15642
BBS (412)864-2294

Speed Read 1.20
SPEED120.ZIP
Jim Smith
344 Observatory Drive
Birmingham, AL 35206
BBS (205)744-8546

Win Qwk for Windows
WINQ200A.ZIP
Doug Crocker
PO Box 1454
Kent, WA 98035
BBS (206)850-0439

MACINTOSH

Alice v2.1
ALICE21.CPT
Michael Keller
Frankfurt, Germany
BBS 49-6101-41471

Freddie v1.2
FREDD12.CPT
Kem Tekinay
BBS (718)997-1189

AMIGA

Amiga-Mail Elite v1.07
AMEV107.LZH
Patrick Evans
PO Box 785
Nobleton, ON L0G 1N0 Canada

MessageView v1.13
MV112EVL.ZIP
Robert Gibbs
4660 Voyager Dr
Pensacola, FL 32514
Voice (904)474-9470

Q-Blue v.08
Q-BLUE08.LZH
Paul Kienitz
6430 San Pablo Ave
Oakland, CA 94608

ATARI ST

MaxiMiser v1.60
MXMSR160.ZIP
Shawn Smith
27 Carr Dr
Ajax, ON L1T 3E2 Canada
BBS (416)683-3089

COCO/OS9

SCRIBE31.AR

CP/M

CRR0140.zip

OS/2

MR/2 1.31
MR2_131.ZIP
Nick Knight
1823 David Ave
Parma, OH 44134
BBS (216)356-1772

UNIX

ATP v1.3
ATPQWK04.ZIP
Thomas McWilliams
PO Box 7545
Arlington, VA 22207
BBS(202)686-9086

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The AQUILA BBS Team (Left to right: Kevin & Kristy Behrens, Steve Williams, Chris Babb)

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Give your modem a workout! We add new shareware and public domain programs everyday. Over 400 programs are added weekly. With more than 5 Gigabytes of on-line storage, we stock over 50 thousand programs. Aquila makes it easy to find the programs that are important to you, by organizing them into 120+ file directory categories everyday.

We cater to the Windows User

With Windows becoming the most popular user interface around, we make an extra effort to keep you supplied with the latest programs and enhancements by devoting a special conference area just for Windows containing 2000+ files organized into 40+ file directory categories.

Our organization and the latest programs make our file areas the most popular around. These are just a few of our most popular categories available:

- Diagnostic Utilities
- System Enhancements
- File Organizers
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- Music and Midi Sound Files
- Computer Animations
- CAD Drawing Utilities
- Business - Finance - Tax
- Novell and Lan Utilities
- Database
- Programming
- Icons - Icon Managers
- Wallpaper - BMP's
- Multi-Media Related
- Fonts - Font Utilities

New User Information

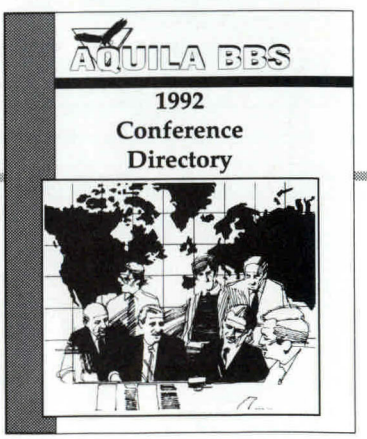
All first time callers receive by mail, our printed 'New User Information' and 'E-Mail Conference Directory' guide, as well as a 'Quick Command Guide' to help you get the most out of Aquila. The new user information covers system services such as answers to commonly asked questions, USAToday, Boardwatch Magazine, and Electronic Mail off-line readers. The 'Quick Command Guide' is a desktop lookup for using Aquila commands.

AQUILA BBS
708-820-8344
New User Information

Aquila Starter Kit

Callers that are new to modem communications will find 'The Aquila Starter Kit' a great time-saver. Easy for the beginner and helpful for the expert! This $39.95 kit includes the following:

- Procomm (communications program)
- Full documentation for all BBS commands
- Off-line file browsing program
- Our complete file listing on floppy disk
- Off-Line E-Mail Reader
- Three month basic membership



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Over 450 Conference Topics

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- Programming Languages
- For-Sale
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WHAT HAPPENED TO ISDN?

Next year, we will reach the end of an experiment to see how fast you can pump digital data, bits and bytes, through a public switched telephone network inherently designed to handle voice sound - barely. In the early days of the last decade, 110 bits per second (bps) and 300 bps connections were about as fast as you could convert digital ones and zeros to an audio waveform, transmit them coherently over the available **3500 Hz** voice bandwidth, and decode them back into digital data at the other end. Advances in filters and detectors could, in theory, advance that to 600 baud (tonal state changes).

Some clever people devised a method of phase modulation to encode TWO bits of information for each tonal change - giving us **1200 bps,** and through quadrature phase modulation FOUR bits of data - **2400** bps. Eventually, new encoding schemes such as Trellis Coding extending this to the **CCITT V.32** standard for **9600 bps.** And today, **14.4kbps** is becoming increasingly common. Simultaneously, data compression technology has allowed us to either compress files to a fraction of their original size before transmittal, or to compress uncompressed files on the fly - today's V.42bis data compression standard for modems. On raw text files, compression gives us the APPARENT flow of data at rates realistically as high as about **30,000 bps** on most data - all vendor claims to the contrary.

Next year, we will see the final leg of this march toward ever higher speeds. The last improvement will bring us to **19.2kbps** - perhaps a little higher in the basic modulation rate. The laws of information theory indicate that at that point, barring some unlikely new breakthrough in physics, that IS all the data theoretically possible to squirt through a 3500 Hz pipe. Some modem designers are counting on a little wider pipe from the telephone company to do some things on some standard lines at higher rates. We don't think it will happen. Those of us accustomed to seeing more magic from the kitchens of the modem vendors every year are due for some level of disappointment. The party is drawing to a close.

So far, this hasn't actually caused much upset. Partly because we haven't yet actually hit the wall, but also partly because everyone assumed along the way that by the time we arrived there, the telephone companies would bail us out with a wider channel.

The great hope for a low cost, flexible, switched public network that could handle higher rates has been **Integrated Services Digital Network** or **ISDN**. Originally proposed in **1979**, ISDN has had such a tortuous history on the way to implementation, that many have noted that it actually stands for **I Still Don't kNow**.

At this point, ISDN is NOT the cutting edge technology offering the highest speed connections. Fiber optic cable and the SONET related products probably hold that spot and a new technology titled **Asynchronous Transfer Mode** or **ATM** is gaining a lot of attention as well. These services can offer data rates of more than a Megabit per second, and in the case of SONET, multiples of that. The problem is that these services require massive outlays of capital expenditure for actually rewiring the connection to your home or business - not likely to be expected from a telephone system that hasn't actually completed installation of touch tone service nationwide and that still sports four-party service in a few rural areas.

Technical progress has been one of the victims of the 1984 breakup of the Bell system, and the seven **R**egional **B**ell **O**perating **C**ompanies (**RBOC**) seem to have been taken over by tiny minds more intrigued by the possibilities of investing money garnered from a guaranteed monopoly of U.S. telephone ratepayers in fiber optic lines across Siberia, insurance, real estate, and cellular telephone towers in Eastern bloc countries than they are in investing in upgrades here in their own service areas.

But ISDN is a hair step from being a fait accompli. It is hanging right there at each central office switching station in the country. The hardware to run it is being installed now in central offices across the land for reasons having nothing to do with ISDN. It requires NO installation of new wire or cable to the home or office - one of it's specific design considerations was to use existing copper wiring. It DOES require the addition of some line driver cards - at about **$100** per subscriber in quantity, to accomplish.

Basic Rate ISDN consists of two **64 kbps** "bearer" or **B** channels and one **16 kbps** data or **D** channels. The 64 kbps data channels are not just capable of, but designed to carry, raw digital data at 64 kbps. You could conceivably inverse multiplex these two channels for 128 kbps connections, and indeed, equipment has been designed to do just that. This is the data connection BEFORE any compression algorithms are applied.

ISDN accomplishes a number of things rather immediately. First, you effectively get TWO telephone lines. You can place two different telephone calls out over the same copper wires at the same time. Imagine placing independent telephone calls from two telephone extensions now - with one telephone line.

Another improvement of ISDN is call setup time. The analog telephone system provides a varying call setup, but on long distance calls,

you can expect as much as an 8 second delay between the time you dial the last digit and when the other end actually starts to ring. With ISDN, this is more like **1.5 seconds.**

There are data services you can purchase now - at fairly hefty prices, to link two or more points. These are used by companies to, for example, bridge two local area networks located in different buildings or parts of the city. But these leased line solutions are essentially standing structures. One of the beauties of a public switched telephone system is that you can erect a link between two points on the globe for just the period you need to complete a call, and then tear it down again (by hanging up) - paying for only the actual time required to conduct the call. ISDN promised to be the digital component of this public switched network.

As long as ISDN was just proposed, the only pricing ever discussed by the telephone companies was **1.5 X** basic telephone service. In other words, if you were paying **$13.50** for a single residential telephone line, you would pay about **$21** for ISDN service. And it would function effectively as two telephone lines. The reason for this pricing theory had little to do with the costs of implementing ISDN. As previously stated, the telephone companies were already instituting most of the requirements for ISDN anyway for other purposes - mostly having to do with their own cost structure and convenience. The reason for the 1.5x pricing was that it was reasoned that that is what would cause eventually universal conversion to ISDN. The subscribers would jump at the chance to have the equivalent of two telephone lines for the cost of one and a half.

And until ISDN is fairly universal, it has rather limited value. You can call non-ISDN telephones from an ISDN installation, but you can't do data on it aside from using an ordinary modem.

The other hope within the data community has been simplicity. ISDN is a chance to start over. Today's modems require too much technical knowledge by the user to get the intitialization strings and commands to work with various modem designs. Too many conventions grew up over the time data communications developed, and users had to become aware of things like the number of data bits, the number of stop bits, etc. that no one really cares or should know about. It was hoped that ISDN would be more standard, since it was based on a standard network designed for data, and this standardization would carry over to the ISDN adapters and software personal computers would use to access the network.

Given the drive by modem vendors to "differentiate" their products and make them more attractive than the next guys modem, I doubt this will actually be the standardization nirvana that most believe. But it could be a little bit simpler - at least for awhile.

But there have been stumbling blocks. First, in the post divestiture days, TWO major equipment manufacturers emerged with modern switching equipment - AT&T and Northern Telecom along with a smattering of smaller developers. Some phone companies bought from one company, and some from the other. And a couple actually mixed and matched between the two as the opportunity arose. And as it turned out, the ISDN based on each of these vendor's equipment, wasn't the same ISDN. They wouldn't work together. So much for standards.

Last year, Bell CORE went back to square one and introduced essentially a NEW ISDN standard they termed **NATIONAL ISDN 1.** Everyone seemed to sign up to it and in theory, it can all work together now. It isn't actually all working together yet, but it could quite soon.

To this point, most ISDN **2B+D** sales have been to companies, under private non-tariffed contracts. They make the connection only within a single central office (CO) or at best a small group of COs within a local calling area. In August, Bell Atlantic announced the first system where a local RBOC switch could pass ISDN calls to national long distance carriers. Termed the **64 Clear Channel Capability**, it will be introduced in New Jersey and Delaware intitially, and will only allow long distance calls within the Bell Atlantic region, but they envision connections to other RBOC through long distance services quite shortly.

The more pressing problem with ISDN have been the RBOC themselves. Some have actually been fairly progressive. Ameritech is currently making ISDN connections in the Chicago area at rates as low as **$18** per month. But even here, they want to slip in a twelve cent per minute charge for a local call. The quest for the quick robbery never seems to end.

The worst of the crew appears to be U.S. West. Insisting that ISDN is a technology, not a product, they've introduced ISDN only as a premium service at rates often in excess of **$100** per month. In Omaha this year, they actually introduced a "data-less" ISDN at a little over **$90** per month, where they actually BROKE ISDN and intentionally disabled the inherent data capabilities - so they could offer it as a value added "option" at over **$100**. This cro-magnon approach to ISDN introduction absolutely guarantees failure of the "product" and appears to be manipulatively designed as a demonstration that there is no market potential for ISDN - basically so they can AVOID offering it in most of their fourteen-state service area?

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Why would anyone want to do something like this? Basically, all of the RBOC, and US West most rabidly, resent being in what amounts to a commodity business. In a perfect world, they DO want the guaranteed business a monopoly grants them, but they would prefer the monopoly extend to higher margin, higher profit value-added services. This is pretty simple, they want to be able to charge whatever they like, and have a completely captive audience that is virtually required by law to purchase from them. This insatiable greed is what funds, in a very direct way, the "free the Bells" sentiment in Washington. These companies are spending millions of dollars gleaned from their own customers to lobby for legislation enabling them a free hand under the cloak of monopoly.

And what do they do with a free hand? The city of **Colorado Springs** is finding out the hard way. U.S. West wooed this city most earnestly to put in ISDN service across the city government and promised them a good rate to do so. Colorado Springs currently pays **$38** a line, or thereabouts, for ISDN service, a scant increase over normal analog lines. They invested over **$300,000** in ISDN terminal adapters and other customer premise equipment (CPE), revised their entire telephone system, and put up with endless system difficulties as US West got the process down to something that would work. This year, the original contract is up. U.S. West has informed them they want nearly **TRIPLE** the amount to continue an already installed service. With the investment in time, money, and resource this small town spent to get ISDN to work, they have little choice but to pay this tyrannical rate - essentially armed robbery by the telephone company with Colorado Springs own investment in CPE as the assault weapon.

The Colorado PUC opened hearings during the week of August 24th on a fairly tentative proposal to make ISDN part of the state definition of Universal Service. Actually, this is a timid foray into addressing this question. It proposes no tariffs, no pricing, or nothing particularly useful in an immediate sense. But US West was granted a rate increase previously to install all digital switching throughout the state over a period of time. This proposal simply mandates that ISDN at least be AVAILABLE, at some price, throughout the state - within five years.

Without even hearing the arguments, by the time the hearings had opened, US West had announced that it was beyond the legal powers of the PUC to make such a demand, and they would fight it in court if enacted.

At least in US West territory, we are quickly reaching a state of open warfare between a regulated monopoly and the subscriber base it serves. ISDN appears to be one of the current casualties.

Colorado is particularly vulnerable to this situation. The state's oil industry collapsed in the '80s and their defense industries in the '90s. Colorado sports a very educated and technical work force. Information industries complement the area's tourist industry nicely in that they tend to be smoke-stack free and bring in much of their income on a national and even international basis.

But outside of Denver, most of the state is quite rural. Small information companies can easily setup shop in small towns across the state, attract quality workers at really low wages compared to either coast and still offer a very attractive cost of living and quality of life for their people. Colorado is geographically central - a slight advantage when dealing with time zones and satellites. But to make it, these companies need advanced telephone services to operate and compete nationally, and will need them more urgently in the future.

Nationally, the situation looks brighter, but not much. Hayes Microcomputer Products, Inc., has had a working ISDN adapter for several years now. The problem is that without a fairly universal ISDN service offering, there is little customer base to serve with it. DigiBoard has recently offered a LAN bridge titled DigiBoard IMAC that will link any Ethernet LAN via ISDN - regardless of the network operating system used, at **$2195**. With one of these boxes on each of two geograpically separated Ethernet LANs, you can link the LANs via ISDN at a feasible data rate somewhat inexpensively. But again, ISDN has to be available in your area. DigiBoard, **(800)344-4273** voice; **(612)943-9020** International; **(612)943-5398** fax.

And this may be one of the areas causing telco intransigence on ISDN. Despite their insistence that "there is no market" for ISDN, they know full well there is one. Over the past decade, they really didn't have a low cost solution for data networking. But companies needed one anyway. So the telcos began offering ridiculously over-priced point-to-point solutions involving leased lines. For large companies with a lot of demand for the connection, these make sense despite their price, which has come down in recent years. But many smaller companies, that can ill afford it and use but a fraction of the capacity they are paying for, still have to have it. If ISDN were offered, a significant percentage of the telco's current hostages would make the switch to the lower cost service using products such as the DigiBoard IMAC or the Hayes ISDN adapter. And the telcos, almost fervently incapable of determining what the market for almost anything IS, doesn't have the vision to see a much larger, albeit lower margin, market among

the general populace to make up the loss of these few data intensive captive customers.

And so ISDN limps along into the future. The unfortunate thing here is not what will happen to ISDN, but what will happen to ALL future public network technologies. The same forces that have applied to ISDN apply approximately to the same degree to ANY further advances in the telephone network. Indeed, ISDN requires less investment in capital equipment than almost anything that can be proposed. The current administrative and organizational structure of our telephone company inherited most of the telephone network we have today. This organizational structure was artificially created by the Department of Justice nearly ten years ago and is unproven as viable over the course of time. ISDN is actually a test as to whether the local monopoly bell company setup then can be trusted to manage this network. If they are unable to implement ISDN on a universal basis, given that ISDN uses both the switching equipment and copper wiring of the existing network with very modest upgrades to equipment, then they will most surely be continously unable to launch more progressive technological upgrades in the future. An economy increasingly dependent on information and communications, will have an aging network incapable of supporting it and every advance will be through a battle with the local telephone company - with entities such as Colorado Springs slaughtered in the process. The very economic well being of individual states, may in the future be determined by whether they are blessed with a "good RBOC" or a "bad RBOC." This is not likely a good thing.

The emerging solution is competition. The FCC is leaning heavily toward allowing competition in the local loop. A Chicago company has been authorized to provide switched services in 28 Illinois communities. Several rulings recently by the FCC have favored co-location issues where companies offering services can demand location adjoining telco switching facilities. And in hearings regarding the coming Personal Communications Network or PCN, the FCC has actually floated the idea of opening the market specifically to non-landline AND non-cellular companies only. And while competition may in the long run be the best solution, it is the long way around. If the local telephone companies want to play at all in a communications future, demonstrating that they can in fact deploy universal ISDN would be a good step in that direction.

SOFTWARE NOTES

GREENLEAF COMMLIB - MODEM COMMUNICATIONS PROGRAMMING MADE EASIER

by Alan D. Bryant

Once you've called a bulletin board, it seems a natural progression to run one. Once you're immersed in communications, it's also fairly natural to have a desire to participate at a higher level — programming your own communications applications. Even expert programmers, however, often struggle with the PC's architecture when trying to code even the most basic of communications programs.

Libraries — pre-written, packaged routines — are a popular solution to many of the challenges of programming. Communications is no exception, and the **Greenleaf CommLib for C** from Greenleaf Software is a robust example of one of those libraries.

What makes communications applications so difficult? Primarily, it's the anemic support for serial I/O in the PC itself. Although the BIOS in a PC or compatible supports basic communications, it does so only in polled mode — a resource intensive, low-efficiency, low-performance method of handling a serial port. In fact, using polled mode with today's high speed modems is a pointless endeavor; there's simply not enough horsepower to handle it effectively. Even for **2400 bps**, polled mode serial I/O is mostly useless.

For this reason, interrupts are generally used for serial I/O. The architecture of the PC and its microprocessor is, in fact, entirely oriented to interrupts. Simply, interrupts are a way to get the attention of the microprocessor and cause it to stop what it's doing temporarily and to handle a particular task. In a typical serial I/O situation, each character coming in or going out triggers an interrupt.

In serial applications, regions of memory are allocated as output and input buffers. On transmit, a communications application places a character in the output buffer, and triggers an interrupt to process the character. On receive, the serial port hardware triggers an interrupt so that the character can be processed by the application.

The interrupt handling requires complex "black art" programming known as **Interrupt Service Routines**, or **ISRs**. These low-level handlers are, in essence, resident chunks of program code. They "attach" to a particular interrupt number, and lie dormant until an interrupt is triggered. Once triggered, the microprocessor stops the execution of the main application, executes the ISR code, then returns to the running application.

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gram has ISRs at its heart. They load when you run the application, and unload once it's done automatically. The program itself handles screen presentations, terminal emulation, file transfer, etc., simply by placing characters in buffers and taking them out, triggering interrupts where necessary to activate the ISR code.

The ISR code is at the heart of the difficulty. Like any resident software code, these special programs must be high in performance and well behaved to perform their function in life. Writing ISRs requires special talent and experience, locking the "average" programmer out of the action of serial communications.

Greenleaf's CommLib for C places the power of advanced communications applications within reach of virtually any C programmer—even those with little practical programming experience. If you understand C language programming, and have a moderate amount of experience doing it, CommLib can be used to generate communications applications in record time.

The library, version **3.20,** is the most current edition of an established set of comm routines. This later version brings with it entirely new simplicity and ease of understanding with its so-called "Level 2" routines. Using the Level 2 functions, you can code an operational communications application with as little as three function calls — one to open a serial port, one to read a character from it, and another to write a character to it. The library's intelligent design handles all the dirty work, while you can concentrate on the operation of your program.

Adding **XMODEM**, **YMODEM**, **ZMODEM** or **Kermit** file transfers is as easy as adding a few more function calls from the library. For each protocol, you make one function call for downloads, and another for uploads. Feed the functions the proper information, and the rest is totally automatic. You can get fancy and tack on sophisticated file transfer status information or pop-up windows to track progress if you're inclined, but very basic programs demand little from you in the way of programming expertise.

One of the strongest features of Greenleaf CommLib is the wide array of communications hardware support. Regular comm ports with interrupt-driven interfaces are of course supported, as are intelligent and non-intelligent DigiBoard, Arnet, and StarGate multi-port serial cards; MODEM Assist and Sparkle for modem and port access over a LAN; regular comm ports with polled mode BIOS interface; and even support for the popular **FOSSIL** comm driver common in BBS and FidoNet environments.

Regardless of which type of port access you use, the only difference in your program code is how you open the serial port. The same code can be used to read and write characters and perform file transfers, regardless of what serial hardware was designated when the port was opened.

Automatic recognition and support for **16550** buffered **UARTs** (**U**niversal **A**synchronous **R**eceiver/**T**ransmitter - the chip that handles serial I/O in the PC) is also included. You can open an unlimited number of ports for simultaneous multi-port communications I/O as well — even a mixture of port types if you wish.

Even though I have only average C programming skill, I was able to code a working, capable communications application over a weekend. Most of my effort was spent in coding the screen I/O routines and **ANSI** terminal emulation. A few hours' work yielded an application

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with full uploading and downloading (including **ZMODEM** autodownloading), a dialing directory, pop-up menus for changing the communications port and its parameters, and a status bar at the bottom of the screen.

Greenleaf provides an excellent reference manual with the library. Besides complete function documentation, it contains helpful explanations and background on serial I/O and the library itself. The support at Greenleaf is equally excellent; the two times I found it necessary to call them, the support reps were knowledgeable, helpful and friendly, providing quick answers to my questions.

Over 100 working code examples are provided. You can quickly locate an example of virtually every function in the library so you can see the proper way to implement it.

One negative of the library is the ZMODEM support, which leaves a little to be desired. Crash recovery is not yet supported, and there's no way to prevent it from overwriting existing files — even if the existing file is identical to the copy of it being downloaded. (Most ZMODEM implementations can be configured to prevent that behavior.) A revision to CommLib, version **4.0,** will be available in early 1993 that addresses these ZMODEM issues, and expands on the library's already rich set of functions.

Greenleaf has made it remarkably easy to write C programs with fully functional communications features. With CommLib, even average C programmers can produce efficient serial applications. **Greenleaf CommLib Asynchronous Communications Library for C**, Version 3.20 - **$359** including source code. Greenleaf Software Inc., 16479 Dallas Parkway, Suite 570, Dallas, TX 75248. **(800)523-9830** voice; **(214)250-3778** BBS.

SHAREWARE FAX UTILITIES FOR NETWORKS

By Thom Foulks

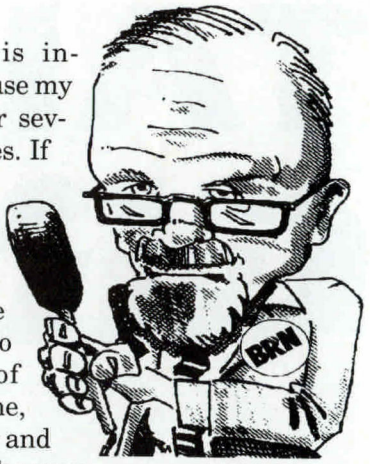
This is a Runtime Review of **FAXPak NetShare** and the **FAXPak utilities**, shareware software that expands the flexibility of an Intel **SatisFAXtion** modem.

It's been nearly two years since I installed a SatisFAXtion fax/modem card in the **'386SX** clone which operates my BBS. It has improved my productivity, and saved the cost of installing yet another phone line to handle fax traffic. The fax card does just fine at handling BBS users from its data modem, and handling incoming fax transmissions from it fax component — all on one card, all integrated.

And, for more than a year, I've shared the fax portion of that card across a LANtastic local area network — realtime! Yes, I can sit at any LAN workstation and tell SatisFAXtion to send a fax out my BBS telephone line.

Prowling around CompuServe one night, I found a **FAXPak NetShare** trial demo, written expressly for Intel's SatisFAXtion and its predecessor Connection Coprocessor. NetShare provides a TSR—memory resident — program that is constantly checking for fax requests on a network, and sends them out, on schedule. It can turn any network file server into a fax server, as well. Yet, NetShare is priced at just **$79**...$$$ below the cost of commercial products promising the same flexibility.

FAXPak NetShare includes two variations of its utility. One is intended for a machine whose sole purpose is a fax server, doing nothing but sending and receiving fax transmissions for the users of a local area network. The other version, which is available for a free 60-day trial, is intended as I use my machine, for several purposes. If I tell NetShare to send a fax while there is someone logged onto the BBS of that machine, FAXPak sits and waits until the user has logged off and the line is clear. The program also prepares a log of fax transmission activity which can be accessed by any workstation on the network, so that all network users can determine their fax traffic has been handled as they commanded.



There is also a multiboard version of **NetShare**, which supports installing up to four fax cards in the fax server PC for higher volume capabilities. Cost, **$199**. As noted, my use is with LANtastic 4.1. The 46-page documentation provides step-by-step instructions for installation with Novell Netware, as well.

The FAXPak Utilities package is a separate collection of programs which provide DOS command line control for SatisFAXtion and other CAS-compatible fax boards. As a simple example, typing "**FPSEND myfile.txt 719-528-8545**" at the command prompt from your machine would send the file "**myfile.txt**" to my combined BBS/Fax server. Other FAXPak commands allow displaying and printing of the fax log, deleting entries from the log, turning on and off the auto answer feature, monitoring "realtime" activity of the fax board, viewing fax files, etc.

The utilities are written with an "open" architecture, so that they can used in conjunction with other software. They can be commanded from a **.BAT** file; or dBASE and Clipper programmers can easily link

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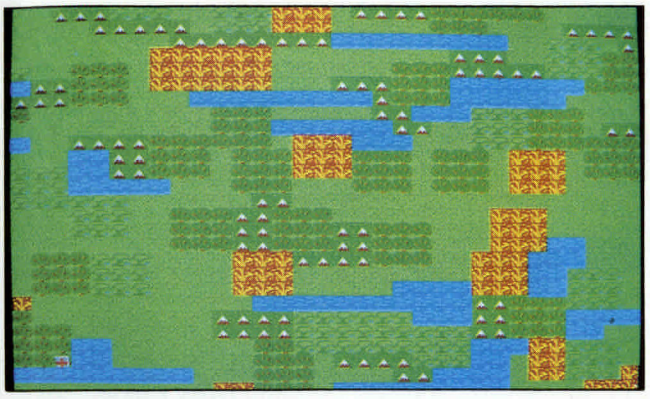

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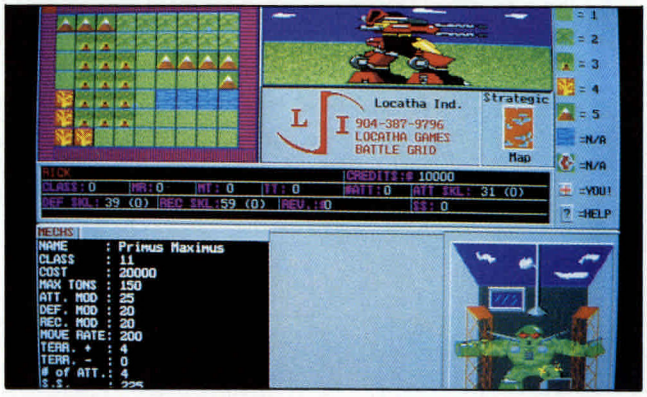

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them to a database application.

The FAXPak Utilities are available in three different versions: A limited-function free "trial" edition available for download from many BBSs, a "standard" edition — **$39** — for registered users, and an "advanced" edition — **$79** — providing additional features (such as support for multiple fax boards in the same machine). The utilities package comes with a well-written 36-page **.DOC** file, filled with usage examples, and ready to print.

For readers who may be surprised (as I was) at the comparative low cost of the FAXPak products, according to author, Jeff Hoffstetter of Longmont, CO. "My software is designed to do what it does. It does not do all the things that tend to make other products much higher-priced. For example, I don't have anyway for you to run any application that you want and simply fax from within that application. Some of the more expensive products may have that capability. And besides which, I'm a small guy so I've got to have a small price, right?" Note also that no direct support for Microsoft Windows 3.x is offered by FAXPak's offerings.

(By the way: Don't confuse the "FAXPak" name with a bundled collection of fax software from Delrina Technology. Hoffstetter had copyrighted the name prior to Delrina's national ad blitz of its bundle. But that's another story.)

A cautionary note: FAXPak shareware is written only for fax cards that use the CAS transmission standards, as originated by Intel. It will not work with other cards. FAXPak is available for download on Compuserve in the Intel area (**GO INTELFORUM**). Or, it may be downloaded directly from the FAXPak support BBS at **(303)772-6778** (look for **FAXPAKTE.EXE** and **FPNSTE.EXE** — "TE", Trial Edition.) Jeff Hofstetter, 1722 Drake Street, Longmont, CO 80503, USA. **(303)440-7683** voice; **(303)651-1161** fax; **(303)772-6778** BBS. e-mail: 70365.110@compuserve.com.

Intel has a FAXBACK information service providing information about their fax/modem products. Dial **(800)525-3019** (**503-629-7586** for international callers) and request document number **9416** for information on their 14.4kbps **SatisFAXtion Modem/400** or document **4019** for an overview "**Understanding PC Fax modems**." Intel PCEO, 5200 N.E. Elam Young Parkway, Hillsboro, OR 97124; **(800)538-3373** or **(503)629-7354** voice; **(503)629-7580** fax; **(503)645-6275** BBS.

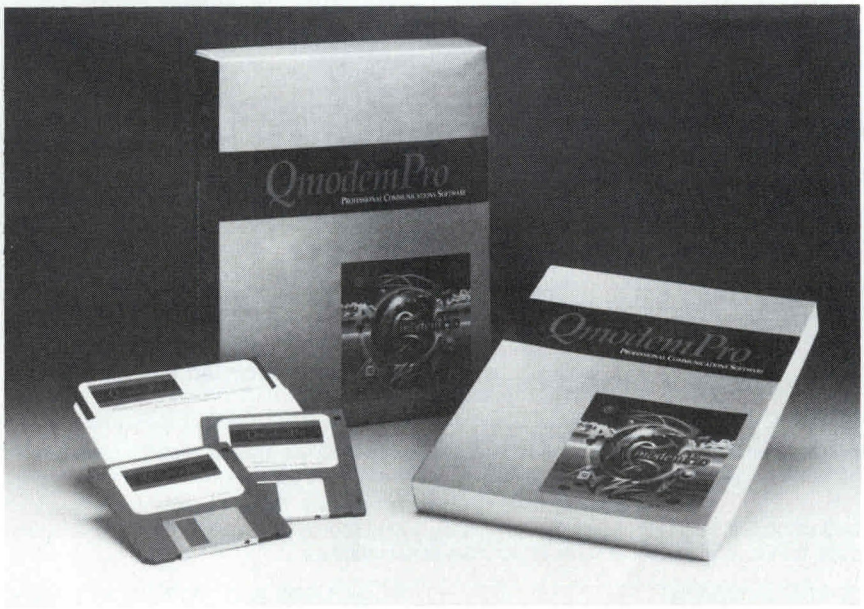
[Thom Foulks has served as a computer consultant, founding host of Computing Success! radio show, and columnist. Foulks also wrote his own Message Hub BBS software package and operates the ***Cache la Byte Hub*** *BBS at* ***(719)528-8545****. - Ed]*

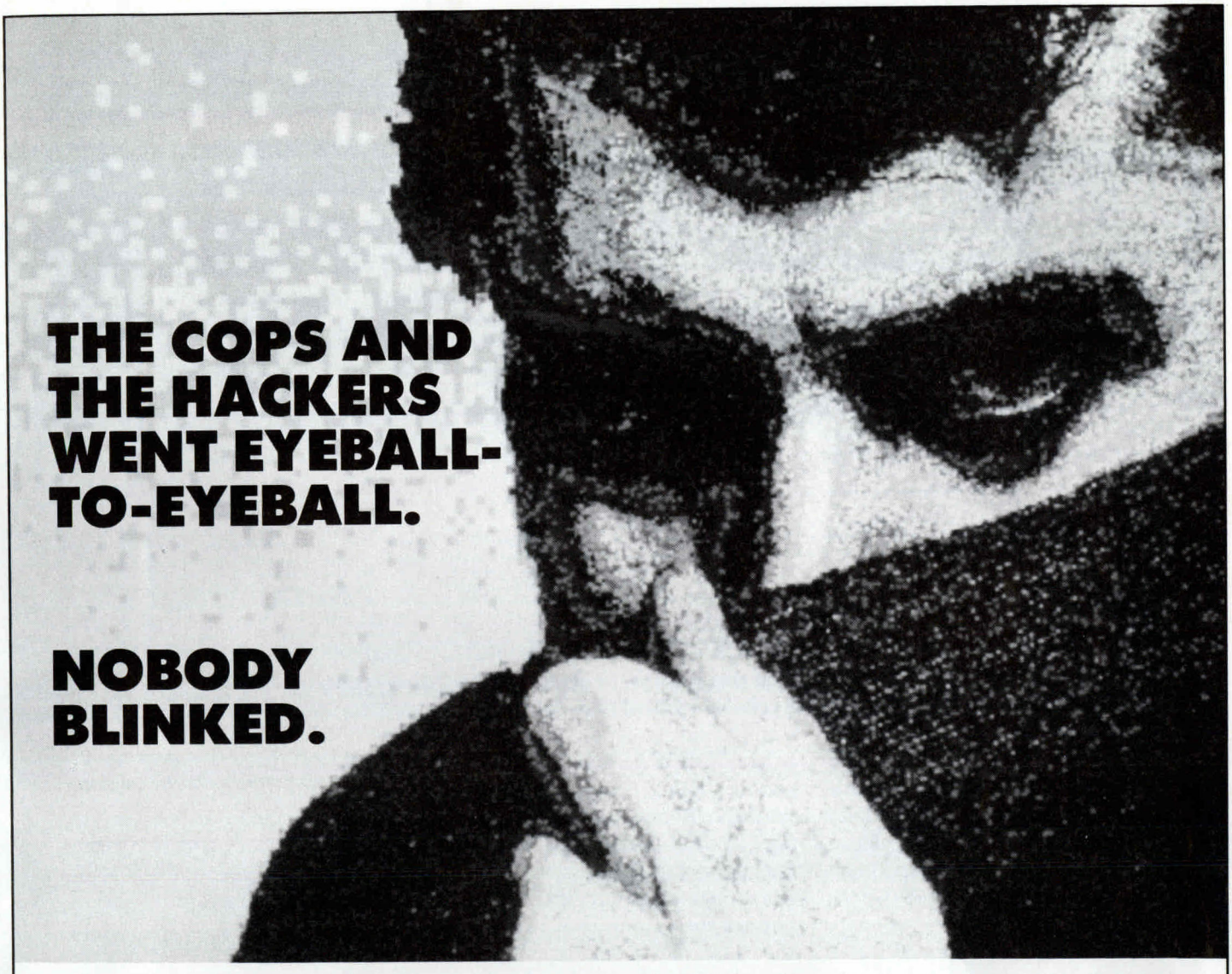
QMODEM-PRO RELEASED

Mustang Software, Inc. has released the latest update to John Friel's popular Qmodem terminal communications program. Characterized as a "complete rewrite" of the program from the previous Qmodem version 5.0, the company has retitled the offering **Qmodem-Pro**. It's available in retail stores at a suggested retail price of **$99**. Over **250 Software Etc.** stores typically discount that price.

The new version represents somewhat of a new direction for terminal programs. The last release of Qmodem included the **OLX** offline mail reader - which derived from Greg Hewgill's popular **Silly Little Mail Reader** (**SLMR**). It was the first popular terminal program to include an offline mail function supporting Sparky Herring's **.QWK** message file format. Between Mustang's Wildcat BBS software and a third party door program titled Tomcat, the OLX offline mail reader supports some features going beyond simple e-mail - including, for example, message file attachments.

The company later was rumored to be releasing an all encompassing e-mail manager titled **Midnight Mail.** We didn't hear further about this program, which was supposed to allow users to manage mail from a variety of services through one interface.





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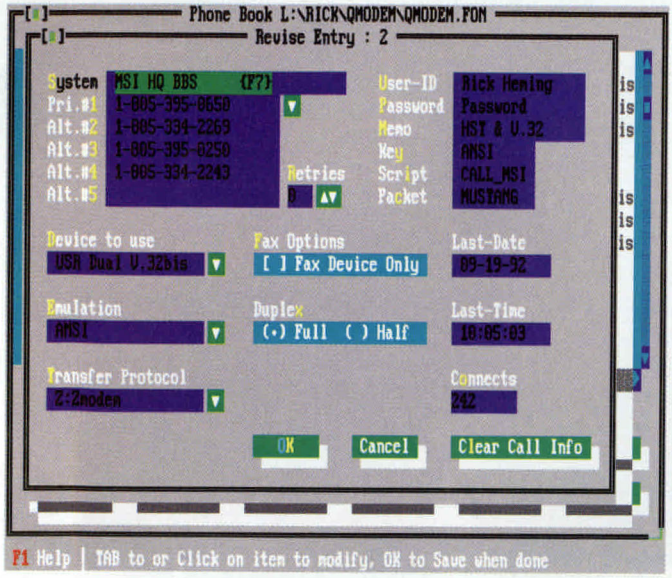
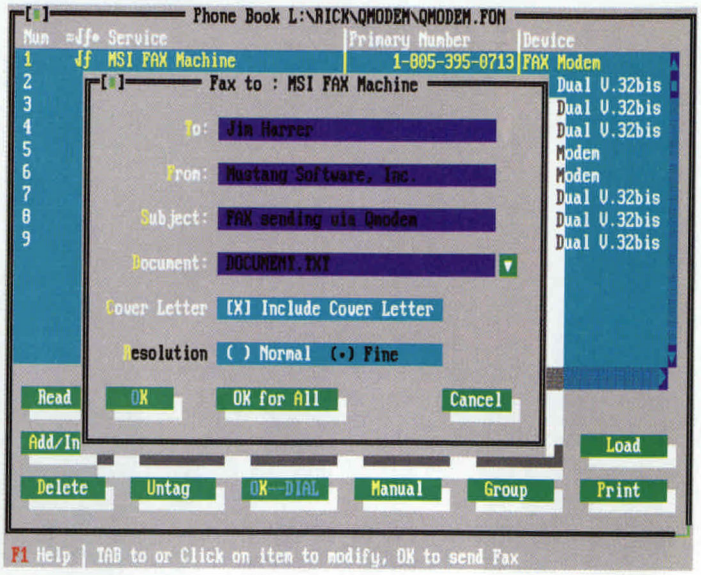
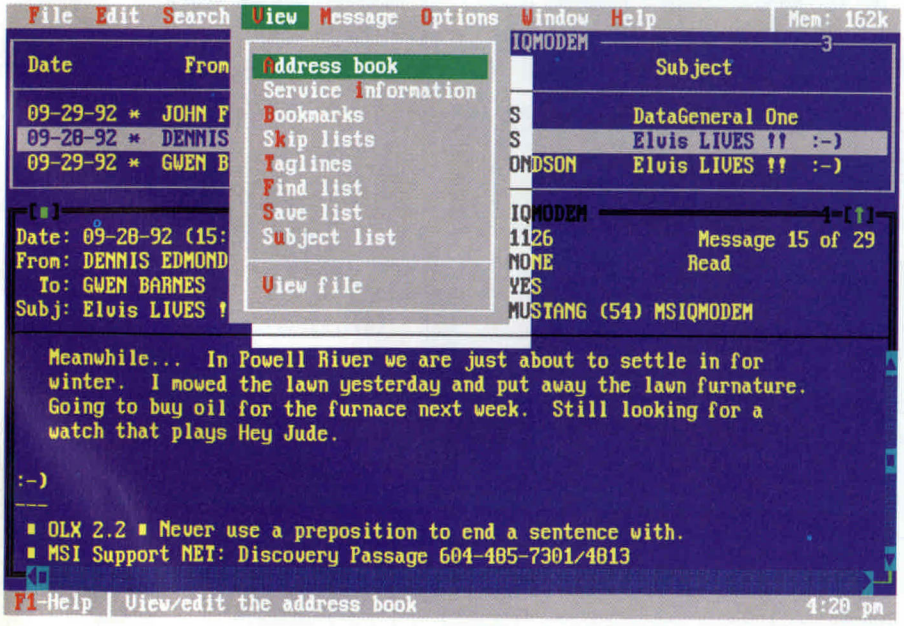




This keys on a growing problem for many denizens of the information matrix. Some are inundated with e-mail from a wide variety of sources - CompuServe, MCI Mail, Internet mail, electronic bulletin boards, etc. Just to go pick up, read, respond to, and send replies to your daily electronic mail can consume a couple of hours in some cases and if you get a day or two behind - consider changing your name and getting all new accounts.

Qmodem-Pro appears to bring all this to ground. The program allows users to retrieve, read, and respond to mail from MCI Mail, CompuServe, any BBS, and other e-mail sources and deal with it all through a single e-mail database. You can not only reply offline, but actually redirect mail from a CompuServe account, for example, to a different account on another service, bulletin board, or even fax machine. Between the e-mail manager and the terminal program, a very powerful combination emerges to manage electronic mail. It may not cut the volume, but it reduces the mechanics of dealing with multiple accounts to a manageable level.

The mail manager includes a number of niceties, including a spelling checker, a text search feature, drop down windows, and cut and paste between messages. One feature that may find some application is "skip lists". You can define **TO**, **FROM**, or **SUBJECT** filters that just skip messages from a particular person or on a particular subject for example. This could lead to a mass movement of whole groups of people ignoring each other online - probably a good thing.



Over **75** new features are incorporated in the upgrade, supporting MSI's claim that it is a total rewrite from version 5.0. The terminal program now allows users to fax **ASCII** text or **.PCX** files directly using any of the dozens of fax modems now on the market. Dialing directories now support up to **4095** entries per "book" and you can have an unlimited number of different books. MCI Mail and CompuServe gateways enable users to grab mail without separate programs. The program was released November 1. The company claims **80,000** registered Qmodem users. They also sport some **15,000** registered users of their Wildcat! BBS software package. Mustang Software, Inc., PO Box 2264, Bakersfield, CA 93303; **(805)395-0223** voice; **(805)395-0713** fax; **(805)395-0650** BBS

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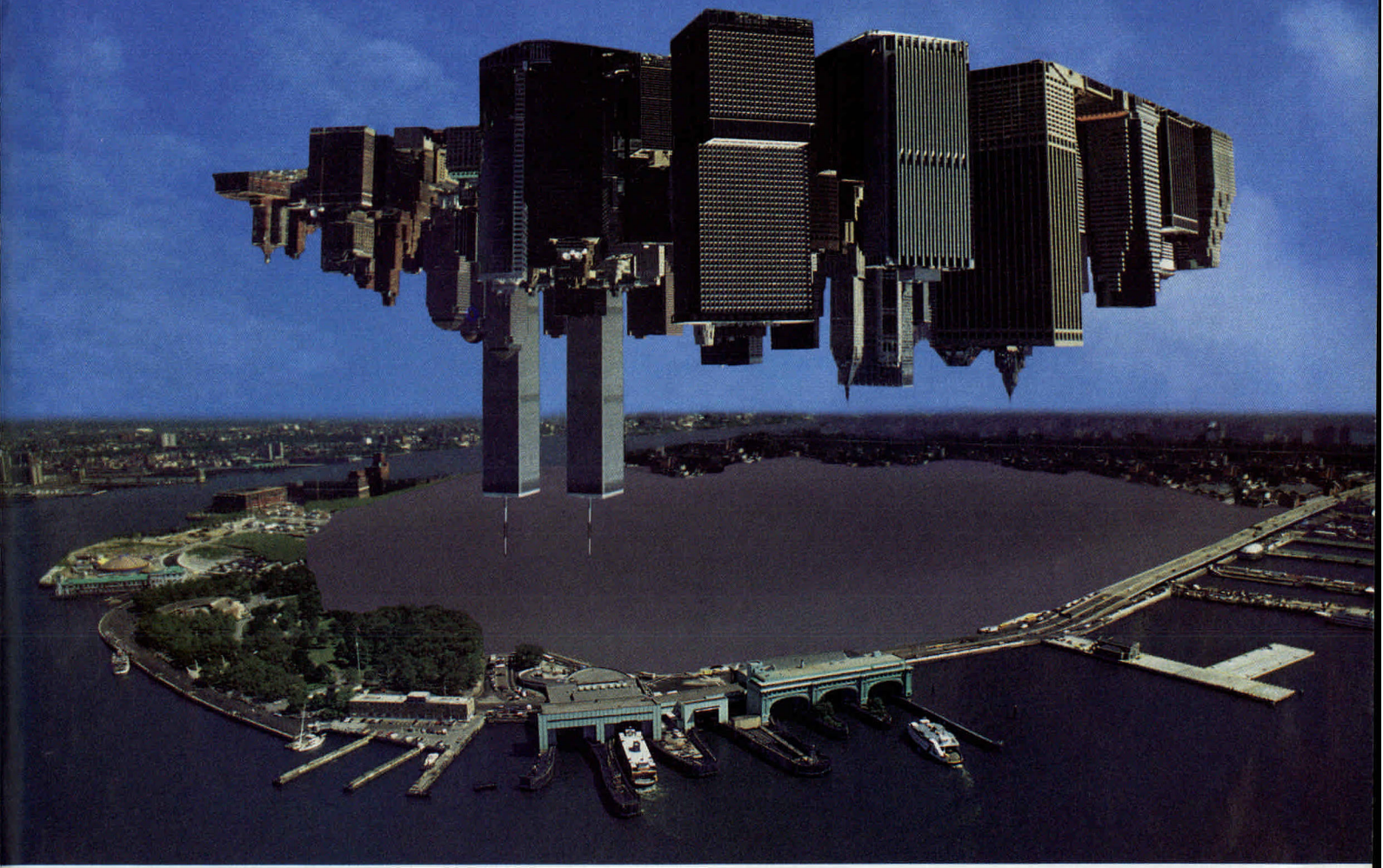

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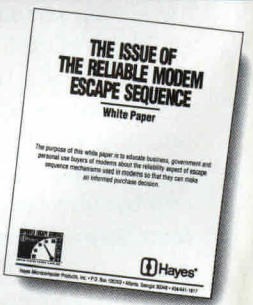

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NAPLPS GRAPHICS GAINS LEGS

The drive toward an online graphics standard allowing electronic bulletin boards based on ever cheaper PC compatible equipment continues to grow legs. A number of elements are contributing to this desire for pretty pictures. Large commercial services such as Prodigy, America Online, and to a lesser degree CompuServe, are trying to differentiate themselves from the growing market in small BBS services by offering very graphic proprietary interfaces. This is a good strategy in that there are more people who AREN'T online than there are who are, and they can virtually cede the entire online population to bulletin boards and still be a step ahead if they can capture the 9000 new callers coming online for the first time each day. The barriers to getting online on the average BBS are still too technical for much of the population and this point and click interfaces make it easier. The existing BBS world is not inclined to cede that market based on technology.

Beyond ease of learning and ease of use, there are a lot of things BBS callers and operators yen for that the ASCII/ANSI world can't provide. Since the first BBS, designers have been stringing together characters on screen to simulate larger character sets. The basic ANSI or ASCII screen offers one type size, but the resulting menus look like lists where the things that need emphasis receive the same treatment as ancilliary items. The scuba diving resource database the BBS is built around has the same visual impact as the utility menu used to change your password. From the beginning, screen designers have tried to glom groups of alphabet characters, IBM graphic characters, and anything else available in the character set into larger characters. The results are usually disappointingly blocky, malformed characters. So emphasis of important items is difficult.

As the online world grows increasingly global, the problems of international language prompts have largely been addressed by BBS software vendors. But the problem of international alphabet sets has not, and there are some thorny issues here. In many languages, the alphabet cannot be contained in the 255 characters provided in an 8-bit set. Japanese online aficionados use terminal and BBS software that provides two-character or 16-bit character sets to represent a fuller range of characters.

And ultimately, a picture is worth a thousand words. Online catalogs need to be able to display products visually in a near approximation of reality. And the concept of communicating with other people by electronic mail and conferences will take on a new character if we can simply see what each of the correspondents looks like. E-mail with attached photo is not far away.

All of this has been true for some time, but the communication connection has been so hampered by the slow speed of the link - typically 2400 bps, that no one wanted to trade speed for beauty. With the cost of 14,400 bps modems in free fall, and increasing numbers of both BBS operators and callers strapping on the newer faster cheaper iron, the channel begins to afford the additional data to do graphics.

But like all jumps forward online, online graphics faces the problem that at this point, approximately all callers already have terminal programs that DON'T support higher graphics capability. If you DID set up a BBS offering such graphics, very nearly none of your callers can see it, and indeed just having it available can complicate the life of both caller and BBS operator.

Into this standoff rode Dave Hughes Sr., a retired Army Colonel hell bent on bringing education online. To do so, he needed an interface capable of spelling out what was what in math, science, and other subjects and ASCII/ANSI wasn't making the trip. At FidoCon91 in Denver last year, he gave a rousing presentation on something called NAPLPS he has championed for some time as the future graphic interface online.

NAPLPS stands for the North American Presentation Level Protocol Syntax. It was designed for the encoding of alpha-numeric, alpha-mosaic, alpha-geometric, and alpha-photographic constructs for display terminals. The main point recommending it is that it is already a documented, published standard blessed and holy watered by the American National Standards Institute (ANSI) as ANSI-X3.110-1983. It's also adopted by the Canadian Standards Association as CSA-T500-1983.

In practice, NAPLPS, like ANSI, ASCII, and even Postscript, is simply files containing ordinary text. But the text represents geometric shapes, colors, font sizes, text, and even bit-mapped photographic images. At the terminal end, this is decoded to direct screen displays. Since it isn't connected to any particular screen size, resolution, or aspect ratio, a NAPLPS decoder is possible for virtually any device capable of graphics at all. In this way, the same data file could be viewed by Amiga, Macintosh, IBM, or virtually any computer system.

NAPLPS also supports international data sets and through the use of DRCS tables, special character sets for mathematics, foreign languages, etc. These tables allow the host system to transmit extensions to the caller that are then used to decode specialized transmissions. In this way, NAPLPS is extensible to handle future graphic problems as they arise.

Is NAPLPS then the graphics protocol for the future? Perhaps. But it does have some drawbacks. NAPLPS files are typically quite small (4-6 KB or less) and the data is plain text. As this data is transmitted from one system to another, if a couple of characters get mangled in the process, the resulting screen can be quite horribly mangled as well. With the increase in V.42bis modems, this is not quite as much of a problem as it was, but V.42bis is not nearly as bullet proof as modem manufacturers might have you believe. Noise on telephone lines is still part of the game.

But the biggest drawback hampering NAPLPS is the dearth of tools for using it. Primary among the needed cutlery is a terminal program of some weight that decodes NAPLPS transmissions. Microstar Software Ltd. has been making NAPLPS tools for some years and in fact, did the Prodigy interface. They have released, at Dave Hughes Sr.'s urging, a shareware version of their Personality Plus III NAPLPS terminal program. It is widely available for download as PP3SHARE.EXE. But on features such as file transfer protocols, other terminal emulations beyond VT-100 (without IBM graphics) and NAPLPS, this program is not remotely competitive as a general purpose terminal program with BitCom or PC Talk, much less the current darlings of the online world, Procomm, Telix, and Qmodem. And until a significant terminal program picks up NAPLPS, there just can't be a caller base for a NAPLPS BBS. Rumor has it that there have been some behind the scenes feelers from terminal program developers, but Microstar has apparently decided their MVDI decoder asset is worth all the gold in the hills and an agreement with any major terminal developer at this point looks very unlikely.

Also needed are screen design tools. Again, Microstar has done what they could with a program titled Microstar Graphics Editor (MGE), widely available for download as MGESHARE.EXE. But whether it's just that we don't understand this program, or whatever, it is less than intuitive to use. What's needed are conversion utilities to take the output of popular graphic design packages and convert one of their available outputs to NAPLPS format. Corel Draw currently seems to be the top of the heap. And their vector graphic format would lend itself to conversion much more efficiently than trying to convert bit-mapped files such as .PCX and .GIF images to NAPLPS described frames.

For the bulletin board software vendors themselves, the conversion is a bit easier. They currently transmit ASCII text to some callers, and ANSI text to others quite readily. Callers can toggle between the two modes at will. Adding a third mode that again transmits text out the port is not too serious a chore. And for areas like file directories and message editors where the structure of a standard 80 column text screen is an advantage, NAPLPS allows them to switch NAPLPS off by transmitting a hex 1B, 25, and 41 character series and switch it back on when you leave the editor by transmitting a hex 1B, 25, and 40 character series. In this way, you can view a NAPLPS menu, select a message editor that works in ASCII or ANSI, and when you leave the editor you are back at a NAPLPS menu.

And some progress has been made. One of the most promising developments is a package for TBBS systems by Randy Harris of Harris Technology Associates in Framingham, Massachusetts. Harris has put together a package containing System Definition Language constructs, the MicroStar Graphics Editor (non shareware) and the PP3SHARE terminal program, that

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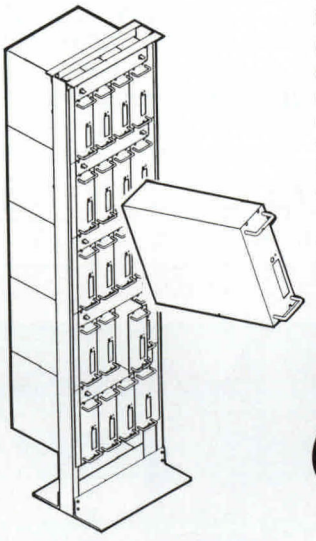

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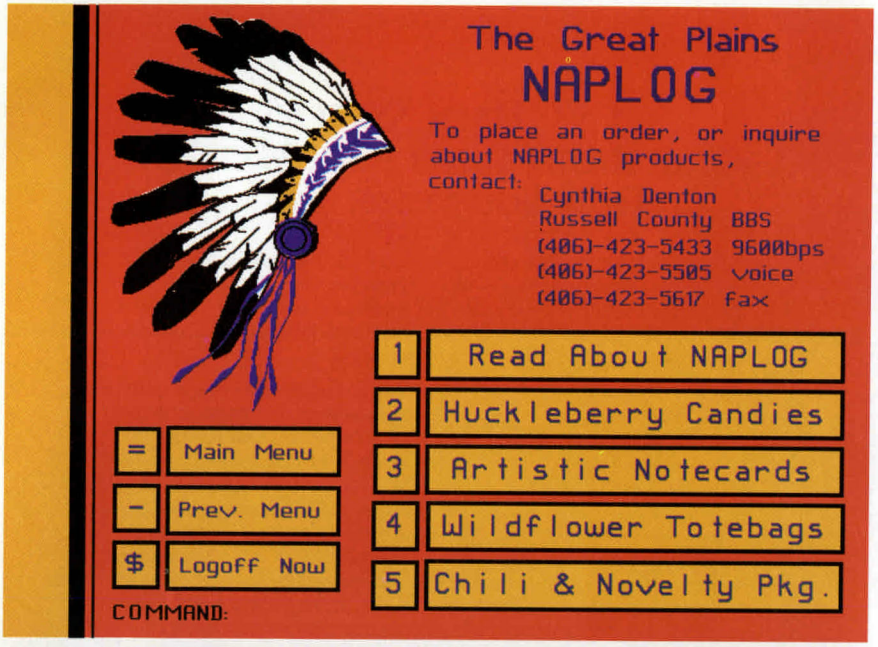
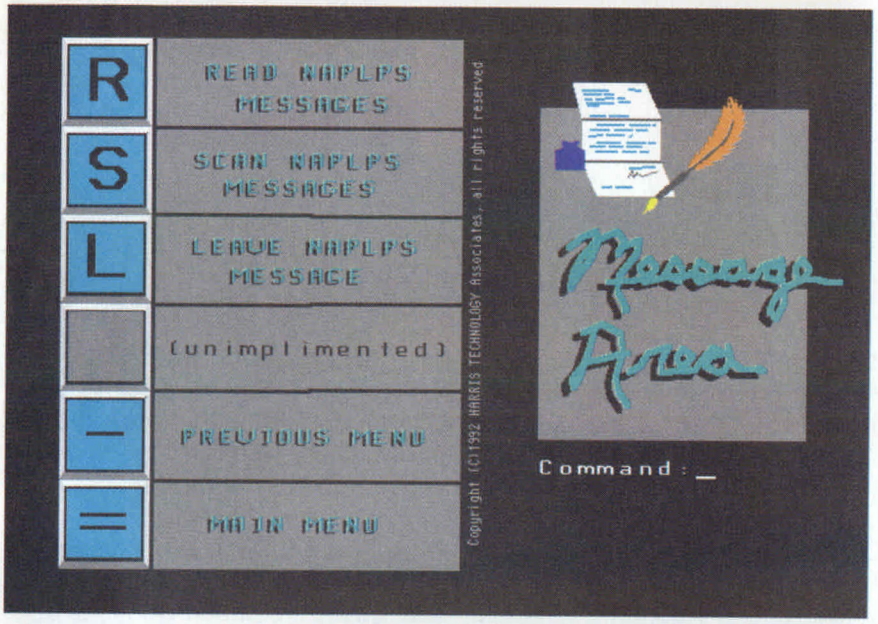




allows TBBS operators to put up NAPLPS as an option for their callers in a day. The package is priced at $169 total and the TBBS host system can still handle regular ASCII and ANSI callers without dropping a byte.

His system, Harris Technology Associates BBS, is available at (508)877-7233. You can logon to the system and press N from the main menu to go to an area devoted to NAPLPS. You'll have to download and install the PP3SHARE.EXE file to be able to view the NAPLPS area. Once you install it and dial back into the system, you can turn NAPLPS graphics on from a menu. The change in appearance of Harris's board is remarkable. Different size fonts, animations, and more. The problem with this package, again, the terminal program is limp - it doesn't support even basic file transfer protocols in any usable way. And Harris's system uses a DIFFERENT technique (probably the correct one actually) to switch between NAPLPS and ASCII than Alan McNamee's terminal program we wrote about in a previous issue. Harris's program is currently offered by Pete White of GW Associates. Harris Technology Associates, 12 Pinewood Drive, Framingham, MA 01701; (508)877-5433 voice; (508)877-7233 BBS.

You can also dial Microstar's system at (613)727-5272. This is a Remote Access system and does not at this point automatically switch your terminal program between modes. You must manually make the change with the ALT-F9 key. But they have a demonstration game on the system we found fascinating. It's called Falling Blocks, but it looks quite like the popular TETRIS game. And the action and presentation look like a glimmer of what's to come in the future with online graphics.

On the terminal end, Microstar also seems to be the only game in town with regards to a NAPLPS decoder. And we've heard rumors that almost everyone who has contacted them to

license the technology has some incredible stories to tell. Apparently Microstar has decided that there's gold in them thar' hills somewhere and can't do a deal with anyone for fear they're going to let some of it slip through their fingers. For now, they own it and they're sitting on it. That's traditionally just the sort of strategy that causes software companies to lose their clothes to 14 year-old shareware authors. But market forces tend to sort these matters out rather nicely over time.

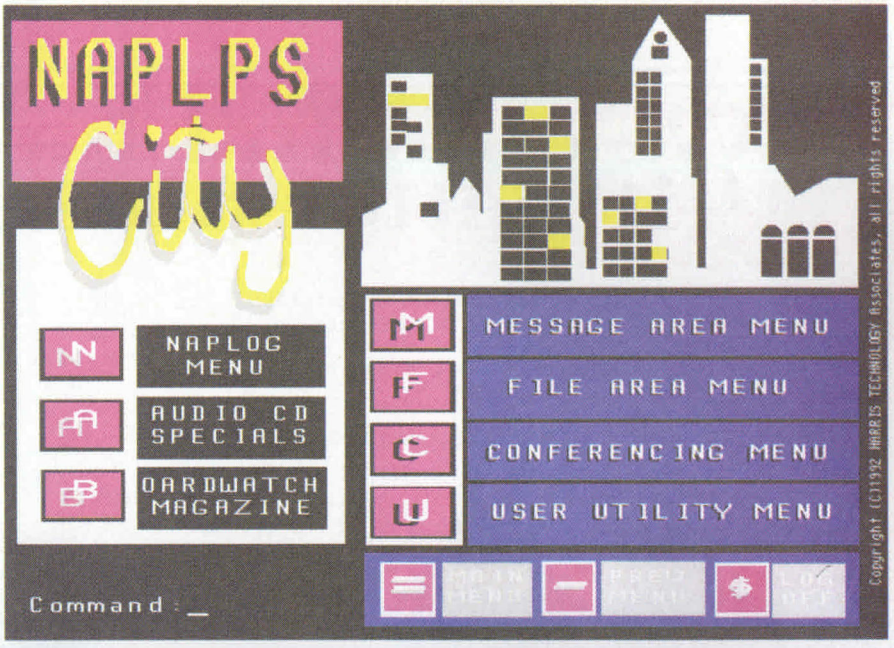
There are other approaches to online graphics and next month we're going to take a closer look at a couple of the more promising comers.

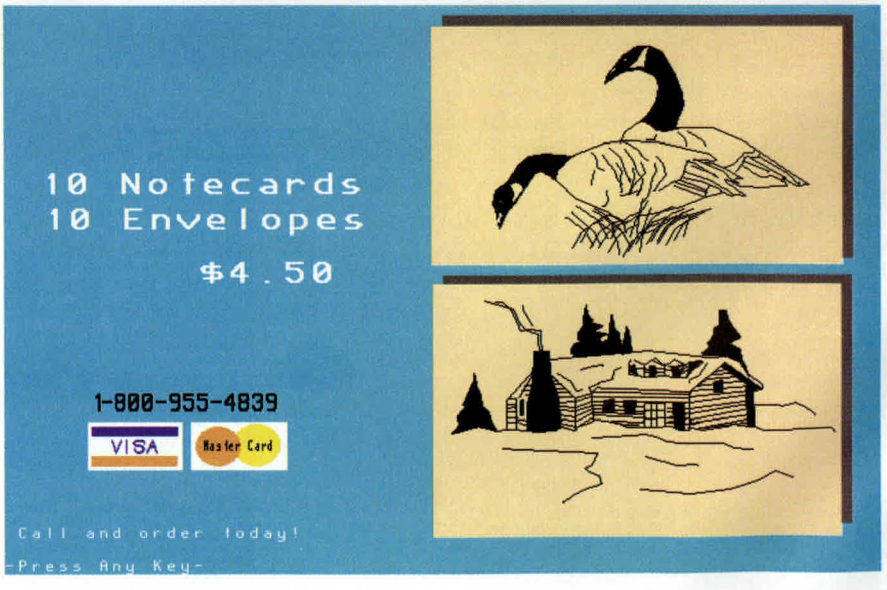
SEARCHLIGHT BBS ADDS MULTILINE DIGIBOARD SUPPORT

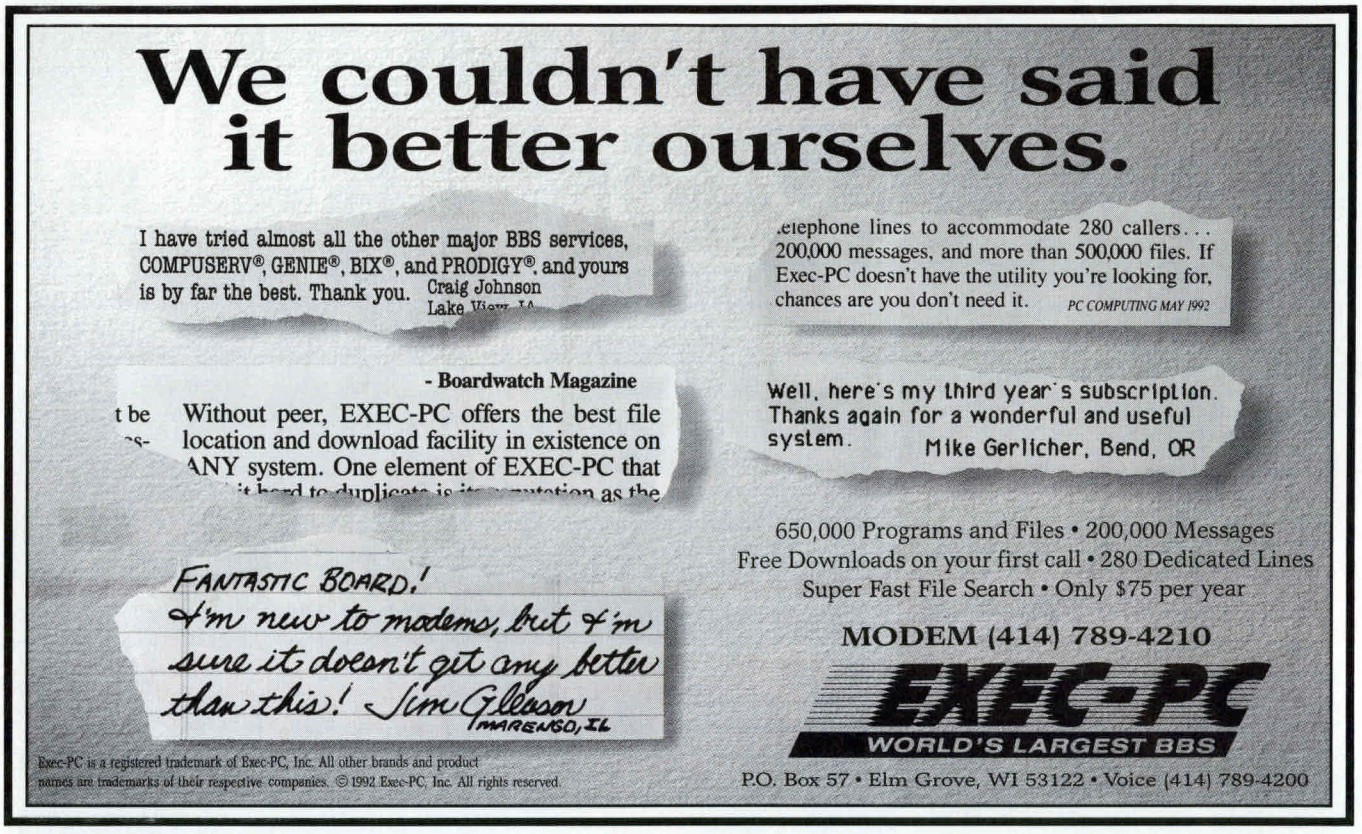
Searchlight Software has announced a new version **2.25D** of their Searchlight BBS software to support up to **10** nodes on a single PC at port rates of up to **38,400 bps** per second using **DigiChannel** multiport communications hardware from Digi International, Inc.

The new version is designed to work under multitasking software such as DESQview, Windows, or OS/2. The product can support high speed data rates in this environment by taking advantage of some of the features of an eight-port **DigiChannel COM/8i**, **PC/8e**, or **PC/8i** multiport serial card. The new Searchlight version is designed to work with a non-interrupt device driver from Digi International that allows use of the normal **COM1** and **COM2** at the same time.

According to the author, Frank Larosa, they've actually tested the software on up to **16** lines from a single PC, but feel that **10** lines are the maximum they can support with confidence at the high data rates. The new version requires an **80386** or **80486** machine.







The new Searchlight **2.25D** is available to all currently registered **2.25** owners at no cost. Unlimited licenses are available at **$399**, up to **10** users is priced at **$299**, **3** users at **$179**, and the single line version at **$99.**

Searchlight has gained some following as a very easy to install and operate BBS package. It offers a very attractive ANSI interface first time callers find easy to use and a fully configurable menuing system allowing BBS operators to tailor their system.

Searchlight Software, PO Box 640, Stony Brook, NY ; **(516)751-2966** voice; **(516)689-2566** BBS.

LEGALLY ONLINE

BOOK REVIEW: THE HACKER CRACKDOWN, BY BRUCE STERLING

reviewed by Lance Rose

BBS' are neither good nor bad. They are general-purpose tools, protean and malleable like the personal computers on which they run, and put to many fascinating uses. In ***The Hacker Crackdown***, journalist and sci-fi author Bruce Sterling gives us a clear bead on a range of shady BBS and computer network activities never before glimpsed as a whole, as strange and exotic to most of us as the wondrous inhabitants of the dark sea depths.

Early in the book, Sterling proclaims that, "the crackdown itself, first and foremost, was about bulletin board systems." What was this "crackdown?" Simply put, it was a series of arrests, raids and prosecutions of computer hackers and other "digital underground" members (including many owners of supposedly underground BBS') by assorted federal agents and prosecutors during the year 1990. The crackdown served notice on our electronic community that cops now walk the network beat to protect our fine upstanding network citizens. Just who counts as a "good citizen", and who doesn't, is one of the themes of the book.

With painstaking care, Sterling examines the historical, social and technological threads that led to the formation of the so-called electronic frontier, and then to the crackdown. These include the explosion of new telephone system capabilities upon the introduction of computer switches and terminals; the emergence of a class and culture of people

(mostly young) who could remotely manipulate telephone and computer systems with the aid of their personal computers; a mad scramble by the telephone companies and government authorities to cut off this new threat to institutional power; and the rise of new civil libertarians determined to prevent the trampling of our Constitutional freedoms amidst all the madness. Throughout the book runs a twisting, absurd (and true) plot in which almost all the various crackdown events occur along a line defined in time and space by the travels of a pilfered computer file describing bureaucratic telephone company operations relating to the 911 emergency system.

Sterling's work has a sociological bent. He imparts a tribal flavor to the various groups and cultures he investigates: the "underground" hackers and their associates, the computer cops, the paranoid telephone company security folks, the new technoid civil libertarians. For most of the book they are decidedly warring tribes.

The book's sociological perspective also allows for a deep understanding of the forces at play in the network underground, surpassing the insights commonly offered by online armchair psychologists. For example, bragging about illicit network exploits is a standard fixture of youthful hacker culture. What Sterling found is that they cannot turn it off. Hackers who are really full of themselves have been known to call up the foremost computer cops in the world and brag right at them. Some even brag about their exploits upon being arrested. This turns out to have been one of the more significant dynamic forces in the hacker crackdown, enabling government agents to gather a great deal of useful information on the hackers without much trouble. The hackers' world may be dark and shadowy, but they're not hard to track down when they're chattering like monkeys. Many of them practically turn themselves in.

The hacker and cop world is full of subterfuge, intrigue and betrayal. Not necessarily a "frontier" at all in the sense of Western-movie big sky and wide open country, but more like a swirling tropical jungle full of hyped-up wild kids, sneaking thieves, virtuous warriors, imperious shamans, expert trackers . . . Sure signs of civilization and decency only appear at the end of the book, as Sterling engages with the civil libertarians.

The book profiles many major figures and events in this new field. There are extended discussions and interviews with prosecutor Gail Thackeray, Electronic Frontier Foundation founders John Barlow and Mitch Kapor and counsel Mike Godwin, federal computer crime investigation trainer Carlton Fitzpatrick, hackers Phiber Optick and Mentor, master computer cryptographer Dorothy Denning, and many others. The major crackdown events of 1990 are also detailed at length and set in context, including the abortive seizure of the BBS of "GURPS Cyberpunk" game publisher Steve Jackson Games, and the show trial of electronic newsletter publisher "Knight Lightning" for accepting and publishing supposedly confidential stolen material.

Sterling approaches his subject at all times with great humility, genuine curiosity, and constant striving for objectivity. This is an admirable feat, especially for a writer who often needs to function as overlord in any number of his own science fiction universes. The book shuttles frequently between the first and third person, relating the objective story, then Sterling's own travels and encounters in the course of figuring it all out, and back again to the facts.

In fact, Sterling's immersion in his

subject, which grows as the book progresses, is remarkable. He tries out "trashing" (a common hacker activity of searching other people's trash for useful information) himself while passing some time at a computer cop convention. He compares an imagined enemy conjured up by a homeless person he meets on the streets of Phoenix with bogeymen "specters" haunting the psyches of the different groups working, playing and warring within the networks. By the end of the book, he's comparing a toy-soldier depiction of an old battle that he sees within the Bunker Hill monument with modern simulation games (such as produced by Steve Jackson Games, and as often beloved by youthful hackers), and comparing Lotus' acquisition of rights to Visicalc (the predecessor to Lotus' own 1-2-3 software package) to the Bell System's purchase of its predecessor Western Union.

But there's a point to Sterling's seemingly unhealthy obsession with marginally relevant coincidences. He's showing that in the course of figuring out all these network characters, he's become one himself, and that the conflicts and activities within the electronic networks both can overlay and be stimulated by the physical world around you once you are sufficiently attuned to the action. This insight helps explain the obsessive and irrational ways in

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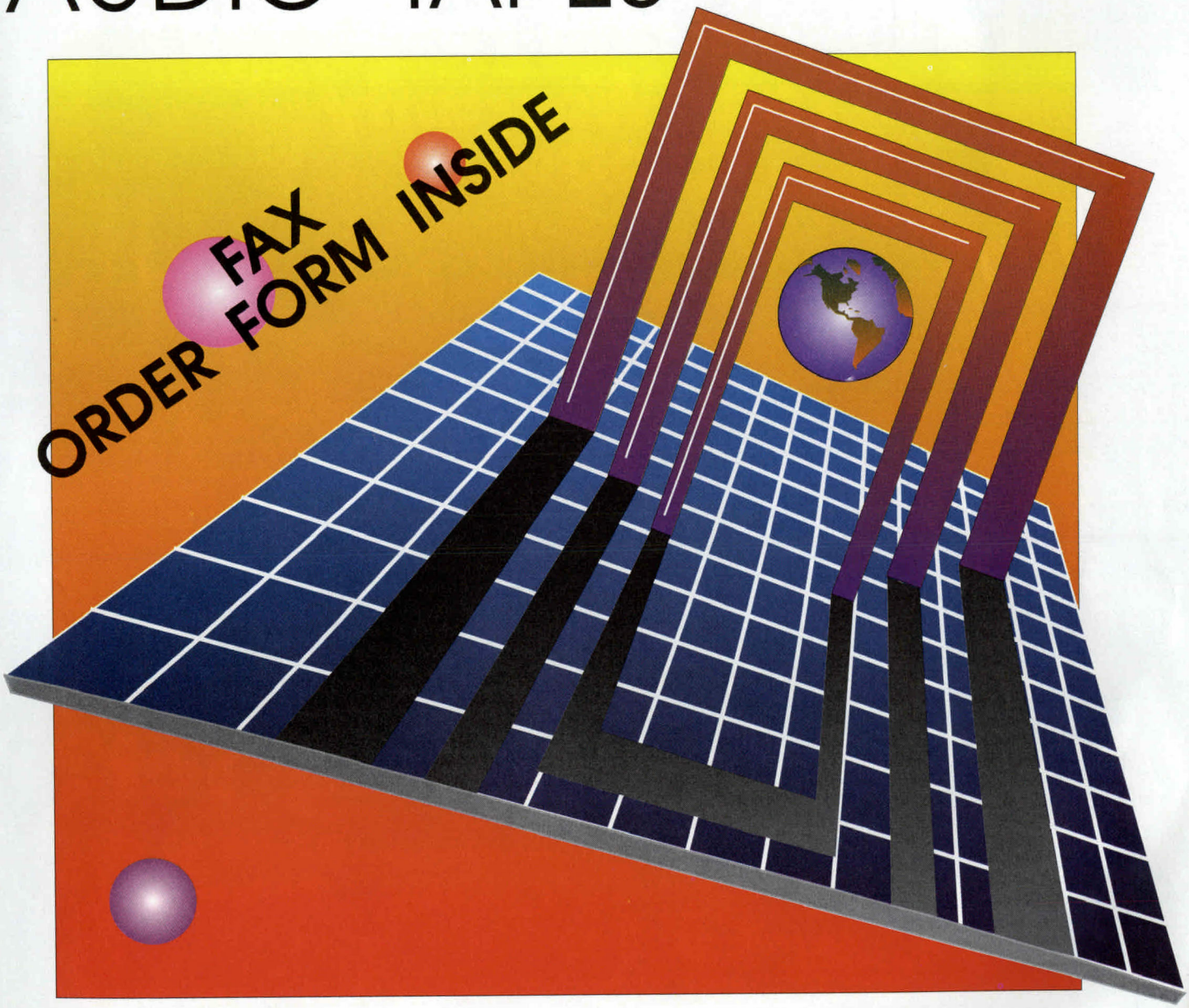

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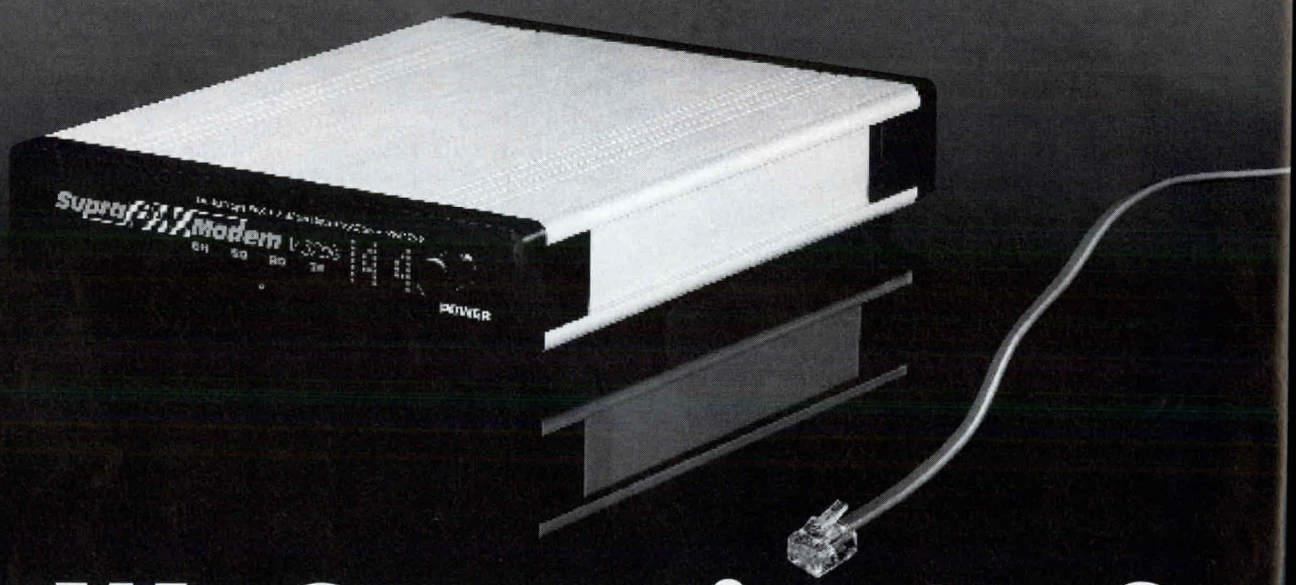

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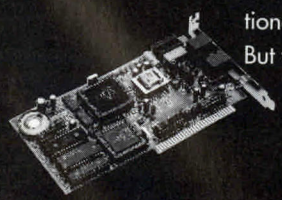

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which the various major online groups interact.

Sterling's achievement in figuring out what the hacker crackdown really was, and how it came about, cannot be underestimated. This is, by far, the most complete and coherent account of the modern hacker/phone phreak phenomenon yet. As a fairly constant observer of the nets, I knew about large chunks of the story before I read this book, but they did not at all form a coherent whole in my mind. Sterling came up with all the missing chunks and pieced together a fascinating and compelling story. Anyone who wants to learn a whole lot more about the hackers, cops and telco people living in our computer and telephone networks should read this book.

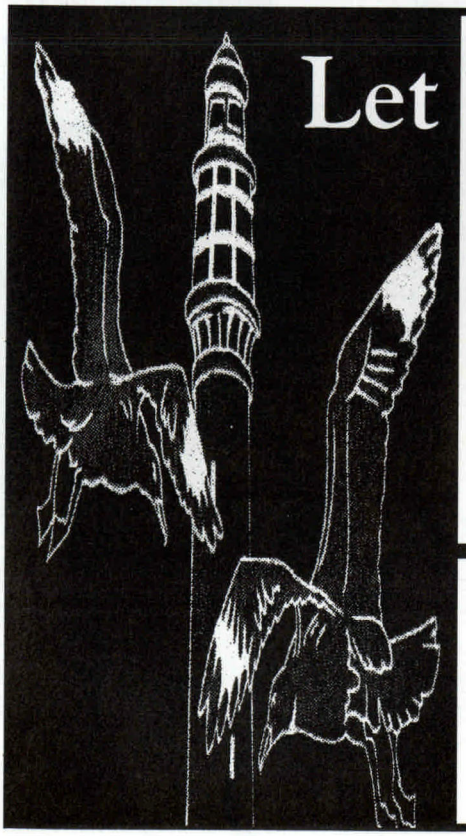
SPA EDUCATES PUBLIC ON SOFTWARE COPYRIGHTS - NOT!

Like many others I know who have some familiarity with computer law, I've always figured that about half of what the Software Publisher's Association (SPA) says about copyright law is true. The rest is mystificationist propaganda designed to make corporate software users run scared from the slightest thought of ever making a software copy without paying someone for it.

For instance, the SPA insists to this day that shrinkwrap licenses on mass-market software packages are airtight and enforceable. At the same time, every court decision I've seen so far on the subject has refused to enforce such licenses! The SPA is not quite wrong on this subject yet, since shrinkwrap license validity must be decided on a state by state basis; some state court might agree with the SPA position somewhere along the line. The issue could be left arguably open for a hundred years, with shrinkwrap licenses getting cut down right and left by courts of different states, and the SPA hanging on to its enforceability rhetoric in the slim hope that out of 50 states, it will get lucky somewhere. Plausible arguability . . .

Until now, though, I never caught the SPA in a flat-out falsehood.

A recent issue of the SPA newsletter distributed to its members contains an article titled "Protect Your Copyrights, Register Software" and subtitled "Register software within 90 days of publication or lose your rights." Within, it contains several statements along the same lines, culminating in: "if you don't register your software with the Copy-



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right Office within 3 months, after first publication, you cannot recover statutory damages or attorneys fees." (this is a very important matter in copyright, especially attorneys fees - if a successful copyright owner cannot collect attorneys fees from the infringer, he could end up with very little money after paying off his own lawyer).

Now, let's look at the actual section of the Copyright Act in question, Section 412(b):

"no award of statutory damages or of attorney's fees . . . shall be made for . . . any infringement of copyright commenced after first publication of the work and before the effective date of its registration, unless such registration is made within three months after the first publication of the work."

In other words, after you circulate your software to the public, you can receive statutory damages and attorney's fees in a case enforcing your software copyright as long as you registered your software with the copyright office before the infringement started. With one added, short-term bonus: if you register your software within 3 months after you first circulate it to the public, then you can receive statutory damages and attorney's fees for any infringements within that same 3 month period, whether or not they came before the registration.

Under the statute, for example, you might wait 9 years after first publication of your software before you bother to register. That registration will give you the right to claim statutory damages and attorney's fees for any infringements occurring afterwards, but not for any infringements that may have occurred in the initial 9 year period before you registered.

Compare this with the SPA quotes. According to the SPA, if you don't register within 90 days after publishing the software, you have entirely lost your ability to claim statutory damages and attorneys fees when you enforce your copyright. If you wait 9 years to register, you can't claim such amounts for infringements any time, either before or after your registration.

So the SPA totally misread the statute. The only question is whether it was through calculation or mental dullness, both of which SPA has exhibited in the past. Actually, there is a third choice - sloppy statute reading. But then you have to ask why they would shock their members with a headline about the dire consequences of copyright non-registration without taking the time to read the statute and figure out how it really works.

Calculation is not out of the question, though. The effect of the misinformation would be to scare software owners into rushing to register their copyrights. This is not a bad thing, and it also serves the SPA's enforcement objectives. SPA likes to threaten corporate infringers of their members' products with copyright registrations in hand. But why deceptively scare corporations into registering with false information, when the correct information, properly presented, would have the same effect? What is the relationship between SPA and its members, anyway?

This has been a public service announcement. Don't take candy or copyright law from the SPA.

MACINTOSH BBS NEWS

by Bill Gram-Reefer

HI-BBS: GUI FOR MAC AND WINDOWS

Allo? Qu' est-ce que ce? Coming from Montreal and its bilingual bent, it's no wonder that hi-BBS from XBR Communications is first to introduce a new generation of Macintosh BBS software that supports both Macintosh and PC-Windows graphical-user-interfaci (GUI). Based on client/server architecture, hi-BBS allows multiple, simultaneous connections from the Macintosh Communications Toolbox (CTB). This real-time multi-tasking server manages all of its files and folders based on a true Finder-based Tree-Structure. Because clients connect to the server and communicate via the hi-BBS protocol, the system allows for both Macs and PC-Windows applications to act as clients.

Controlled through Apple Events, the server supports E-Mail, forums, CD-ROM and live conference sections. hi-BBS supports multiple BBS groups on the same server and provides user management administration capabilities including passwords, access levels, and provides tab-delimited connection statistics that can be used with an integrated utility to automatically invoice subscribers.

The Mac User Interface is System 7 savvy and the Mac user version is backward compatible with 6.0X systems, too. Windows provide the metaphor for downloading files and folders or reading and replying to messages. The E-Mail window and Forum windows both support sending and receiving attachments to base files. The Live Conference window allows for the session to be

saved to the server. According to the company's literature, hi-BBS' PC-Windows user interface runs on Microsoft Windows allowing users to connect via a modem to the server. The graphical user interface is the same as that of the Macintosh version.

Macintosh system requirements to run the hi-BBS server program are fairly basic, Classic to Quadra, with at least 2.5 MB RAM running System 7. The user versions for Mac and PC support up to 9,600 bps modems with V.42bis compression. The PC user interface requires an IBM or compatible PC (386 @ 33 Mhz recommended) with 1 MB RAM and Windows 3.0 or higher.

XBR also provides a series of CTB-compatible tools and custom-designed, 2- or 4-port serial NuBus cards to allow systems and users to connect to X.25 or Switched-56 lines with sessions established either by calling or listening. Each X.25 connection can support 100 users. hi-BBS also supports other serial connections and AppleTalk nets.

Mildly amused? It gets more interesting. Through a service contract, XBR can develop additional custom applications for your BBS including, but not limited to: custom graphical interfaci, online ordering and product catalog modules, full-text document search and retrieval with Boolean, proximity, wildcard and loop searches; online SQL server, and Quickmail, MS-Mail, O.C.E. and X.400 gateways.

XBR also offers a HyperCard-based BBS Toolkit that comes complete with an easy-to-use command language so you can even hack a knock-off of Tradewars. Coming soon: a completely modular server, system and feature expansion through externals, a BBS Apple Events suite, and C++ libraries full of custom functions.

XBR prices hi-BBS by the nuMBer of phone lines supported rather than the nuMBer of users. Let's say it backwards: free unlimited users; you pay for the nuMBer of lines connected to your Mac. There. Aren't you glad you didn't just scan the headline? Bien! XBR Communications, 5253 Decarie Boulevard, Suite # 350, Montreal, Quebec, Canada H3W-3C3; **(514)489-1001** voice; **(514)489-4966** fax; AppleLink: XBR; **(514)489-0445** bbs.

BBS SOFTWARE FOR GROWNUPS

Previewed at MacWorld Boston in August, Lotus Notes for Macintosh (LNM) is Lotus Development Corp.'s workgroup computing software for the Mac. This new addition enables Macintosh users to communicate, share information, and develop workgroup applications together with Microsoft Windows and IBM OS/2 users also running Lotus Notes in a networked environment.
The Macintosh version of Notes operates as a client front-end application on the full range of Macintosh computers, including the Apple PowerBook, allowing organizations to integrate their remote and networked Macs into an enterprise-wide get-it-done-and-let's-party environment. As a fully-supported Notes client, Notes for Macintosh users can create, edit, sort and share

Notes documents like sales reports, easily develop Notes applications including customer tracking, or online database modules; participate in structured conferences, and access system-wide services such as security and database access and replication, either as a remote call-in or networked or gateway user.

LNM supports Apple's System 6.04 plus and System 7 and can connect with LocalTalk, Ethernet or Token Ring networks to Notes servers running IBM's OS/2 personal computing operating system. Notes for the Macintosh takes full advantage of Apple Events, Balloon Help, 32-bit addressing and virtual memory.

In essence, LNM is a user version of a host program that let's your Mac play with all of the applications native to the server, which isn't a Mac. But seriously, we're not talking Flash Attack, here, the Notes environment is an important example of where BBSing is headed: transparent, cross-platform connectivity and interoperability. Sounds like BBS software with a mission. Too bad Jack's Internet pals didn't think of this. But that's supply-side, trickle-down, voodoo economics for you. Them's that can pay get the good stuff with the cool interface. The rest of us have to FTP. Who sez government workers are coddled?

To give you an idea where all of this might be headed, Lotus claims over **120,000** Notes users in **400+** companies, including some of the largest; Andersen Consulting, for instance, buys 'em in lots of **20,000**. Lotus has already made steps to more tightly integrate Notes into the Novell Netware environment including support for Novell's **Message Handling Services** (MHS). Other strategic partnerships include a licensing agreement with Verity, Inc. to use that company's full-text retrieval technology. Additionally, Lotus will incorporate technology from Eastman Kodak (document and image management), Calera Recognition (optical character recognition) and GammaLink (fax capabilities). Of course the fun part is integrating all of that to produce a Notes-based incoming fax set up that will transform and store the fax image into fully searchable and retrievable text.

I wonder if they plan on introducing a Fidonet gateway? Lotus Development Corporation, 55 CaMBridge Parkway, CaMBridge, MA 02142; **(617)577-8500**.

NEW MICROPHONE SUPPORTS TCP/IP

O.K. So you bought a high-speed modem. So, who you gonna call? The Internet, of course! Well, now that trendy chore will be even easier with Software Venture's new release of its flagship Microphone product. In fact, faxing will be easier, too, as the **MicroPhone Pro** package bundles its new **MicroPhone II 4.0.2** telecommunications software with its **MP Telnet Tool** and **FAXSTF** fax software from STF Technologies.

MicroPhone II, is widely recognized as a leading telecommunications package for the Macintosh. So what's MicroPhone 4.0 got that 3.0 hasn't got? Plenty! 4.0 is System 7 savvy with support for Apple Events and Balloon Help. There are other perks. The new version's support of Publish and Subscribe, for instance, provide the ability to download and automatically route new information to the right place in a spreadsheet or word processing document. Its support for the Connection Manager of the Communications Toolbox lets you connect to more networks and services. And, in addition to new support for **VT220** and **VT320** terminal emulation, MicroPhone II 4.0+ also knows **HyperCard 2.0 XCMDs** and **XFCNs** to expand power and customization. With its color icons, picture buttons, interactive dialogs, floating palettes, popup menus, powerful scripting language and automatic script recording, you get to make your very own, auto-

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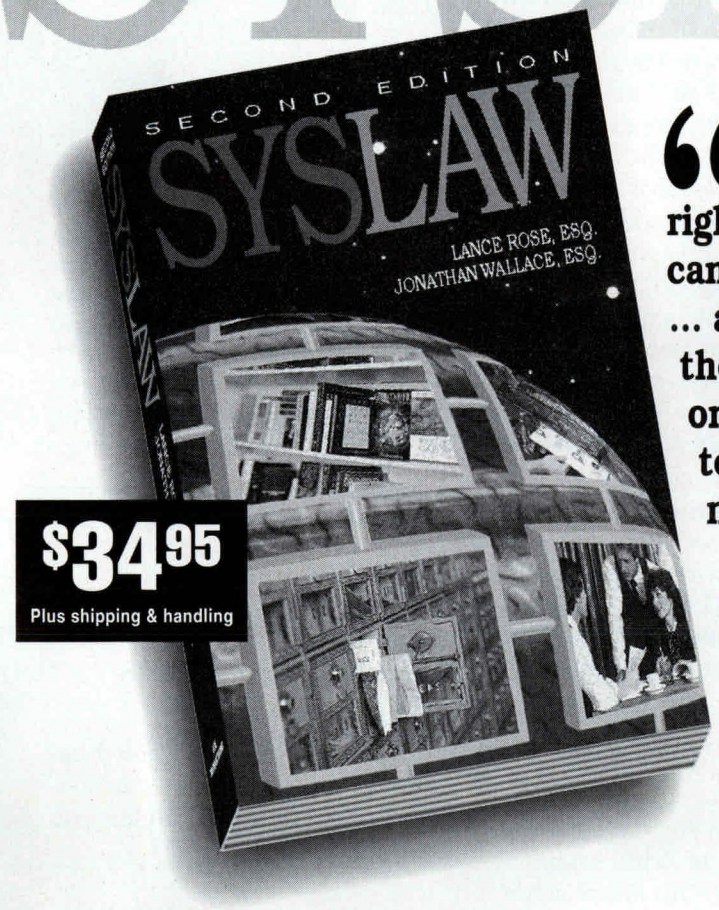

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JACK RICKARD
EDITOR and PUBLISHER
BOARDWATCH MAGAZINE

Lance Rose and Jonathan Wallace, leading experts on electronic information systems and BBS law (with over 20 years combined experience in their respective legal practices), bring you *SysLaw: Second Edition* — the most comprehensive legal reference ever written for BBS sysops and callers. This 336-page book details the following topics:

- **Your Rights as a Sysop**
- **Privacy**
- **Sexually Explicit Material**
- **The Caller Contract & Other Agreements**
- **Injurious Materials & Activities on Your BBS**
- **Who Owns the Information on Your BBS?**
- **Crime and the BBS**
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- **Dangerous Code**
- **Plus 10 Appendices of relevant communications laws, a sample caller contract and information sources.**

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matic, easy-to-use graphical front-end to virtually any remote server. And now you can point that gun at the Internet.

The MP Telnet Tool is a TCP/IP connection tool written for Apple's Communications Toolbox. It lets you connect to any platform that supports TCP/IP including DEC, VMS, SCO UNIX, NeXT, HP, IBM, and others. The MP Telnet Tool lets you log on to any telnet host that supports TTY, VT52, VT100, VT102, VT220, VT320 terminal modes and transfers files using most common transfer protocols including ZMODEM. This connectivity, plus the interface tools, offers a big step in helping users navigate and automate tasks in the TCP/IP environment such as mail, news, database access and data retrieval.

Spokespeople for Software Ventures claim that the introduction of the Telnet Tool is but the first such in a series of extension utilities that will eventually include File Transfer Protocol (FTP), Serial Line Internet Protocol (SLIP) and TCP mail reader tools not only for the Mac but for the company's Windows version of MicroPhone as well.

The Pro package includes FAXSTF, the popular Mac software that lets users create and send faxes from within any standard Macintosh application. You know how it works by now, essentially you fax instead of print. FAXSTF includes a Phone Book and support for precision layouts and Adobe Type Manager which helps you create attractive cover sheets.

Something for everybody: the Pro package lists for $295; the MicroPhone program itself now lists for $195; the MP Telnet Tool, as part of the MicroPhone TCP/IP Tool Library which includes FAXSTF, carries a suggested retail price of $95. The entry-level version of MicroPhone, v.1.7 has been renamed Personal MicroPhone and will retail for $49.95. Software Ventures Corporation, 2907 Claremont Avenue, Berkeley, CA 94705; (510)644-3232 voice; (510)848-0885 fax.

MULTITASKING TELECOM SOFTWARE

Mercury Systems has released its macINTERCOMM product, an innovative, telecommunications program that actually lets you start a file transfer and get back to work. According to the company's literature, with macINTERCOMM, you can compress files, boot large applications, recalc a spreadsheet, play a game, run gargantuan After Dark files, do any processor-intensive task that would normally abort your file transfer yet suffer no interruption or decrease in speed of the transfer.

Full protocol support includes all forms of XMODEM, YMODEM, YMODEM-g, and ZMODEM with on the fly compression, and an advanced Kermit with extended packets up to 9K. Emulation support from TTY up through VT220 are included with full 16-color PC-ANSI.

Other features include: Auto Dial with redial, a Smart Dial that automatically adjusts your phone nuMBers to your current area code, built-in scripting with compiler, script recording with macro editor, 20 MB save-til-next-time scroll buffer, and the ability to keep up with fast text throughput and still scroll around smoothly. Results of a vendor-conducted test show fairly impressive ZMODEM throughputs: up to 28% faster than MicroPhone II and 34% faster than the White Knight (all that armor we suppose).

Multitasking telecommunications? I don't know if this is a good thing. I normally take a break from my desk when I start a download: stretch, check the mail, spy on my neighbors, not altogether time-killing tasks, mind you, but things that don't need to be done at the desk. Not that enamored of Spectre, or Cribbage 2.5 (it cheats in the "count my hand mode," anyhow), I truly welcome those breaks that get me out of the chair. But here comes Mercury Systems and their Tayloresque time-clock attitudes about work management and software productivity. Plus it's priced to compete with MicroPhone. Tempting fate, that.

What I really want is to be able to download and/or send multiple files at the same time, like you can with FirstClass 2.0, AND do something else with the computer or rescan the sports page for the eighth time. Make a universal telcom package that can do that with any server and you're talking the 38th level of Dungeon of Doom.

$199 retail. Demoware available on the Big Board. Mercury Systems, Inc., 10000 Santa Monica Boulevard, Suite # 123, Los Angeles, CA 90067; **(310)553-0881** voice; **(310)553-1291** fax.

STOCKING STUFFERS

Depending on the size of your chimney and wallet, here are some holiday gift ideas that every Mac sysop will cherish.

The newest editions of CD-ROMs packed with software from GigaRom or BBS in a box (vol.7) will be available soon. Quantum Leap Technologies, publishers of GigaRom, will also press a custom CD-ROM for $199. These are Golden Master CDs, 640 MB, ISO 9660, Macintosh HFS, and Mac/ISO Dual Format compatible. Quantum Leap Technologies (800)762-2877; BBS in a BOX, c/o Arizona Macintosh Users' Group; (602)553-8966.

Books from Osborne/McGraw Hill: "Dvorak's Inside Track to the Mac" (Includes One 3.5-inch diskette of the author's favorite Mac shareware

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(and scores). 729 pages. $39.95. And, "The Mac Made Easy," by Martin Matthews. 328 pages. $19.95.

Apple Quadra 950. 68040 running 33 MHz, 8 MB RAM, expandable to 64 MB; ten built-in peripheral ports, holds up to four storage devices, five NuBus expansion slots for all of those multi-line DMA cards from Applied Engineering, 1 MB video RAM to support all Apple monitors, one processor-direct slot provides direct access to the CPU, up to 32 bits per pixel for true color, etc., etc. Don't you wish?

MAC BBS OF THE MONTH

Could you imagine what it would be like if everyone just tinkered with their automobiles and never actually drove them anywhere except to get to Grand Auto or (honk-honk) AAMCO? Once in a while, some people actually stop computing for computing's sake and use a computer to actually reach some other unrelated goal. For example, graphical-based BBS host systems running on the Macintosh happen to provide an important benefit to business use, primarily in the areas of customer support and acting as service bureaus. As a class, they are easier to use and navigate, particularly for beginners. Ease-of-use is particularly noteworthy, especially as a means of delivering extended or value-added services to customers, which is, once you think about it, what every successful BBSs does.

CCS is a BBS operated by the Campus Computer Store affiliated with the University of Chicago in Chitown. Running TeleFinder, CCS is a free service maintained by the technical staff of the store. It provides technical support to customers who buy computer equipment from the store. CCS also provides current pricing on a variety of products it carries in addition to software upgrades for many applications.

Eric Hoffman, chief sysop of CCS, runs the board from the basement of the store on an SE/30 with a 40 MB internal and 170 MB external hard drive. Currently operating two lines, CCS is equipped with a couple of U.S. Robotics V.32bis Courier modems. By the time you read this you might find more lines, a IIFX humming along and a possible Fidonet node. In addition to store related information and help, Eric uses CCS as an outlet for his own passion: collecting and disseminating information on the Internet; the board carries a variety of files and use to support the store, Eric finds that the BBS really helps move information and sales along. "We're close to Fermi and other Labs," Hoffmann noted. "Those customers always have an interest in current pricing. So, instead of writing someone's name down, entering the information into a database, printing a flyer and mailing it out much later to prospective buyers, they can just download the most current listing right away," he explained.

In addition to the folders containing pricing, news and some messaging

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(not much), the CCS set up has TeleFinder put "help" and "commonly asked questions" folders at the main screen level so beginners can get their hands held as soon as they log on. Upgrades are made available to authorized users through TeleFinder's ability to customize access to paths and privileges.

Operating since June, 1992, the BBS offers pricing on and support for Apple, IBM, Dell and NeXT products. CCS users are split fairly evenly between DOS and Mac users. Eric welcomes callers from outside the university community, especially those with an interest in the Internet files. Of course, if you want to check out current pricing on the new PowerBooks and just happen to have your credit card handy. . . well, who knows what could happen. CCS, 6019 S. KiMBark, Chicago, IL 60637; **(312)702-7500** voice; **(312)702-2146** bbs w/8N1 & V.42bis (no MNP-5). Log on as "Guest" with the password as "Guest."

ATTENTION MAC SYSOPS

If you have a Macintosh-based BBS let us know who you are and what you think you're doing that makes your board special. To make things easy for everyone, mail a diskette containing your user program with a preset account, time allotment (1-hr for editorial deadbeats like me should be plenty) and password to the address below so I can log on and take a look around your system. Also include a text-file that describes your board and any interesting places on it you think are special. I'll try to visit as many boards as possible and write about the most interesting ones I can find. MAC BBS, 2069 Highland Drive, Concord, CA 94520.

[Bill Gram-Reefer, based in Concord, California, is a publicist working with Comstock Communications. He operates ***WORLDVIEW BBS (510)676-2919*** *running on a Macintosh computer. As the former editor of SHOWPAGE and associate publisher of Western MicroMarket, Bill has been writing about Macintosh computers since 1984.- Ed.]*

INTERNET NEWS

INTERNET STATISTICS

Everyone loves statistics about the online world. And in the case of the Internet, it is a most fortunate thing since everyone quotes plenty of them in an awesome variety of different numbers. This is not as suspect as it appears. What numbers you come up with is defined by what you count as part of the Internet.

The NSFNet backbone is widely considered the heart of the network. The various numbers you encounter will include networks directly connected to this, plus any number of other things more or less connected to it. It is in this more or less area where things appear to break down and some of the more wildly optimistic numbers start to find earth to grow in.

Merit is a Michigan educational entity that administers the National Science Foundation contract to provide backbone services. They maintain some fascinating statistics on a machine at **NIS.NSF.NET**. You can access these statistical files by file transfer protocol with the command **ftp nis.nsf.net.** The actual files are found in **/nsfnet/statistics.**

According to the month by month records, As of **September 30, 1992**, there were some **6,640** networks connected to the NSFNet backbone. The United States accounted for some **4404** of these but **2236** networks were located in some **43** foreign countries. Thailand, Ecuador, and Estonia were the latest entries in July, 1992. As of **September 1991**, there were some **3389** networks including **1128** foreign nets.

The number of networks effectively doubled in the course of the year - U.S. growth at **94.78%** and foreign growth slightly higher at **107.09%**.

This same growth can be noted by the aggregate traffic carried on the network itself. In **August 1991** for example, some **1484 billion** bytes traversed the combined **T1** and **T3** infrastructure of the NSFNet. In **August of 1992,** this figure had again more than doubled to **3200 billion** bytes - a **115.63%** increase indicating that USE of the Internet is growing faster than additional network connections by about **15%**. But this byte traffic number is likely the tip of the iceburg. These byte traffic figures count ONLY the traffic crossing from one regional network to another via the NSFNet backbone. They don't at all address traffic WITHIN a regional area's local subnets.

MINDVOX - NEW YORK INTERNET SERVICE

An increasingly popular niche online revolves around smallish UNIX systems offering dialup access out one door and Internet access out the other. These aren't the regional networks setup to offer host access to the NSFNet backbone, but another layer connected to those regionals. Operating as small commercial services, they offer an inexpensive bridge between the Internet world and the somewhat more accessible dialup district anyone can access with a modem. There are an increasing number of them, and they are a bit unusual.

We recently stumbled across one of these in New York titled **MindVox** that has some interesting characteristics.

Technically, the system runs on a **NeXT Turbo** with **64 MB** of RAM tied via LAN to some **3.2 GB** of storage. If that weren't unusual enough, it uses a program titled **VOICES 2.0** that is essentially Thomas Dell's **Waffle II** running on **NeXTSTEP**. Like most UNIX systems, the result is a little clunky, but actually pretty easy to use.

The system offers **24** dialup lines in New York at **(212)988-5030**. It also has an IP connection to the Internet and you can telnet to the system with **telnet phantom.com**. The actual IP address is **38.145.218.228**.

For dialup callers, the system is a pretty good value at **$10** per month. Callers have an Internet mail box, access to about **1600 Usenet News Groups**, a connection to the Interactive Real-time Chat (IRC) function that can have up to 500 users engaged in a massive global chat. Those who want to **telnet** into the system can do so for **$10** per month as well, although the system doesn't give them access to Usenet Newsgroups and some other functions they already have access to anyway.

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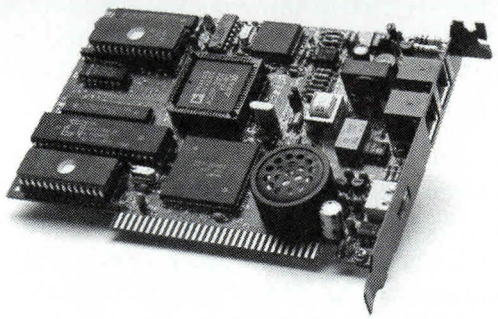

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But in addition to an unusual custom software setup on a NeXT machine and Internet access, MindVox has a very different flavor from those you may often encounter. The system is actually the brainchild of Patrick Kroupa (Lord Digital) and Bruce Fancher (Lord Dead). Kroupa has written a long, rambling essay espousing his early years as a "hacker", a hiatus from CyberSpace, and his recent rediscovery of the online mystique. While the 60KB editorial sports some valiant efforts toward self aggrandizement and some overdone shots at the "suburbia/tract housing" of today's common PCBoard-style electronic bulletin boards, if you discount the "onliner than thou" elements, it's actually a pretty interesting description of the growth and transition of teenage hackers into adult online enthusiasts. Actually, it was a bit enchanting.

And the catharsis may be representative of a larger picture. Recall that **Len Rose,** a prominent figure in the **Operation Sun Devil** drama, was arrested for breaking into a Bell South computer and fetching a copy of a 911 service administrative document that the telephone company claimed was valued at some $79,000. Rose plead guilty to the charge. Craig Neidorf, a college student in Missouri who published an electronic newsletter titled Phrack, was also charged with a variety of things based on the theft, transportation across state lines, and publication of the document. A trial ensued in St. Louis and as it turns out, the document was publicly available from the telephone company at about **$13.50**. The charges against Neidorf were dropped. But since Rose had already plead guilty, his sentencing, despite the fact that it occured after the Neidorf trial and after what actually amount to fraud and manipulation of the justice system by the telephone company had been revealed, somehow Rose got 14 months in prison anyway. I've never been very comfortable with this turn of events, and Rose likely less so. Subsequently, we read regular accounts from Rose of life behind bars in Jim Thomas's electronic publication ***Computer Underground Digest***. He apparently found the stay in jail a very focusing and clarifying experience.

Rose was released a few months ago, and apparently Kroupa has hired Rose as the system administrator and chief of security on the MindVox system. And Neidorf and Jim Thomas are on the system regularly along with a host of luminaries from the network and the hacker underground. Bruce Sterling, author of ***THE HACKER CRACKDOWN*** has been on a few times and the system seems to be forming up as a hangout for a whole bevy of maturing hacker underground types. This makes for a rather interesting community of users.

The system exhibits a kind of an adolescent humor that hits sometimes and misses about as often - alternating between grandiose and often lengthy poetic descriptions of a grander cyberspace, and arcane inside jokes. They claim to be newer, flashier, and more satisfying than gummy bears and longer lasting than most hair styling products for example.

In any event, the system is different, clearly experimental, and working in this new Internet host bridge niche that's struggling to find legs. This one's certainly worth a look. Phantom Access Technologies, Inc., 1562 First Avenue, Suite 351, New York, NY 10028; **(212)988-5987** voice; **(212)988-5030** data; Internet: **info@phantom.com**.

ECONET: THE ECOLOGY NETWORK

by J. Scott Christianson and Dan Wendling

No longer an alternative or radical viewpoint, environmentalism is beginning to change our lives and our world view. The online world is also

changing because of concern for our common habitat. Many BBS now carry environmental conferences and echoes. And some BBS are devoted solely to environmental topics (Boardwatch, November 1991). Online environmental communities are found on services such as CompuServe (Outdoors Forum, Good Earth Forum), America Online (Environment Club, National Geographic Online), and the WELL (Environment). This article explores EcoNet, a service devoted solely to environmental conferences and topics.

EcoNet is a fairly large system. The software and hardware have changed several times since EcoNet was first started in 1984 on four Apple computers. EcoNet now operates on a Sun SPARCstation II with 64 megabytes of memory and 3.5 gigabytes of hard disk storage.

EcoNet is just one of many networks administered by the Institute for Global Communications (IGC), a non-profit corporation that develops low-cost access to computer networking for activists outside the United States, especially in non-industrialized and Southern Hemisphere countries.

ECONET USERS

Currently EcoNet has over **3,500** subscribers and is growing by about **200** users per month. A recent article in World Watch magazine commented on EcoNet's size: "Given the size of the United States, this may appear to be a fairly small group, but it is one with considerable leverage. More than 60 percent of EcoNet's members are organizations or individuals representing organizations. Indeed, EcoNet's online phone directory, which gives the names and addresses of all of its users, reads like an bibliography of the American environmental movement."

Some, like Lester Brown of the World Watch Institute, are well-known environmental researchers working to create a sustainable society. Others, like members of Earth First!, are known for their preservationist attitudes and for the militant tactics they often employ.

The common denominator of this diverse online community is these environmental activists have realized that if they want to be as successful as the industries and Political Action Committees (PACs) they lobby against, they need to be more sophisticated in networking and organizing people for their cause.

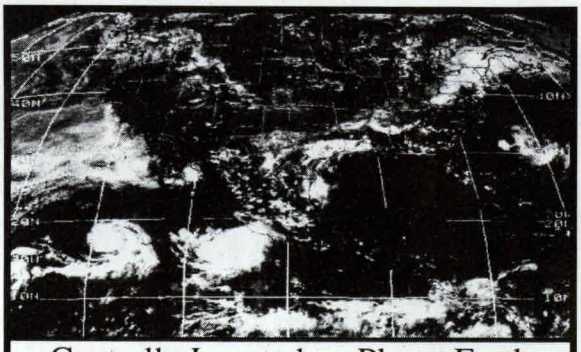
Many organizations have established private conferences on EcoNet. These conferences are available only to the members or officers of that particular group. For example, the EcoNet newsletter reports: "The Green Party of California has been coordinating some of its organizing efforts online. GPOC uses private electronic conferences to iron out some of its internal disagreements rather than devote limited and infrequent face to face meeting time to this necessary but not so pleasant part of developing a party. The low cost of a statewide meeting taking place online doesn't come close to what they'd have to pay for long-distance telephone rates or even a general mailing."

COST

Besides an initial fee of **$15**, a subscription to EcoNet costs **$10** per month, which includes one hour of off-peak time. Connect charges are **$5** off-peak and **$10** per hour peak (7am-6pm). EcoNet can also be accessed through the Internet (**telnet igc.org** or **192.82.108.1**) at an hourly rate of **$3**. Users can call EcoNet by modem directly in Menlo Park, California at **(415)322-0884** (8N1).

FEATURES

The EcoNet interface is very basic and offers 3 main functions: Mail, Conference and Database. Although



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the capability exists, EcoNet doesn't offer any graphic menus, and all the command prompts are on a single line. The user manual explains: "If IGC adopted a multi-line or graphic menu of commands for all users, the U.S. subscribers would only see a tiny increase in cost. For overseas users, the cost could increase enormously, since they pay according to the number of lines of text sent via a Packet Switching System."

EcoNet is well connected to other networks. In addition to the mail linkages that result from connections to Internet (including connections to Fido, CompuServe, America Online, MCI Mail, the WELL, etc.), EcoNet users can send mail to GlasNet (a computer network in the Commonwealth of Independent States, formerly the Soviet Union), Padisnet (the Pan African Documentation Centre Network) and several other networks.

A new feature of EcoNet allows users to send faxes and telexes while online. Using this feature, an EcoNet user can read a bulletin about the newest clean water legislation, type a letter to his/her Senator or Representative while online and then immediately fax it to Congress. A typed letter can be in a congressperson's office fifteen minutes after a constituent reads a legislative bulletin!

An EcoNet user from Venezuela explains how he uses EcoNet's telex abilities: "Telex service here requires a three minute minimum for sending to Cuba and Uruguay. To make matters worse, it sometimes takes more than a week to get a telex connection to Cuba from Caracas. Now I send short one minute telexes (through EcoNet's telex service). It is a paradox to go through a US service to get better connections to Cuba!"

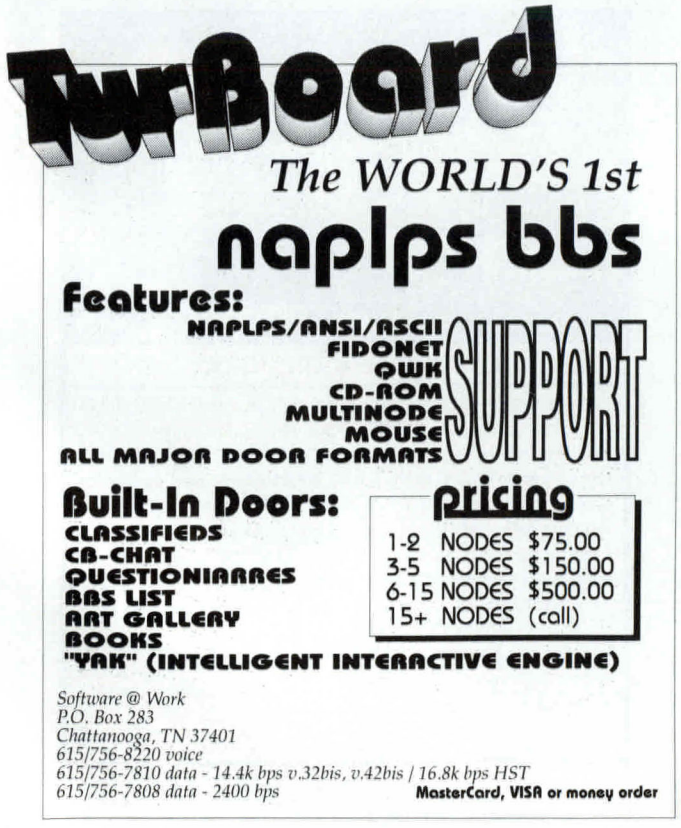
EcoNet's growing list of online databases includes: UN NPPA, a United Nations list of National Parks and Protected Areas; Harbinger File, a directory of citizen groups, government agencies and environmental education programs concerned with California environmental issues; DEER, the Directory of Environmental Education Resources; RG-Energy, energy cost analysis system sponsored by Real Goods; Events, a searchable calendar of events posted by IGC users; and EPA, bibliographic citations compiled by the US Environmental Protection Agency library network. All of these databases are accessible without additional charges.

EcoNet's power lies in its conferences. Over **500** EcoNet conferences are available, as well as over **300** related conferences from other networks, including UseNet and other IGC networks (PeaceNet, HomeoNet and ConflictNet).

EcoNet users can create a "visit list" of their favorite conferences. This handy feature allows people to type in a list of the conferences they are interested in only once, instead of each time they logon. After setting up this list, users can select "v" and the computer will transfer them to the first conference in their visit list. When they want to move on, selecting "v" again will move them to the next conference in the list until all the conferences on the list have been visited.

EcoNet's online conferences have become an extremely valuable tool for environmentalists. For instance, EcoNet was used to coordinate and plan the United Nations Conference on Environment and Development (UNCED) that was held last June. Jean-Claude Faby, director of the New York UNCED office, told reporters before the meeting that the best way to stay informed about UNCED was to "Use EcoNet."

Held in Rio de Janeiro, Brazil, UNCED was the largest United Nations conference in history. EcoNet has over 30 conferences pertaining to UNCED. Most of these were used by Non-Governmental Organizations (NGO) to prepare for



UNCED. Most of the official UNCED documents are available from EcoNet in several different languages (English, Spanish, French and Portuguese).

One of the most impressive UNCED documents posted on EcoNet is the Rio Declaration. This declaration is a set of goals and objectives for building a sustainable society; a sustainable society is able to support its people without sacrificing the resources that future generations will need to live healthy lives. This idea is expressed in the familiar saying, "We do not inherit the land from our parents, we borrow it from our children." The Rio Declaration recognizes that all humans are "entitled to a healthy and productive life" and that countries have a "right to develop." (Unfortunately, it will of course take much more than a well-worded declaration for our global society to become sustainable.)

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EcoNet is the home to many online environmental newsletters including ***The Energy and Climate Information Exchange*** (ECIX) newsletter; ***Develop Net News - Online News and Views on Technology Transfer in International Development***; and ***TIEMPO - a Bulletin on Global Warming and the Third World***.

EcoNet has been experimenting with publishing daily newsletters from international conferences. EcoNet volunteers or staff attending a conference write a short newsletter after each day's meetings. This newsletter is immediately transmitted to EcoNet and other networks. People on the network get blow-by-blow reports from meetings that aren't in the news everyday. An important advantage of this type of meeting coverage is that people who read the daily newsletters and decide that their viewpoints are not being represented by their country's emissary can fax or telex a message to him or her, before the next day's set of meetings. Last year, this technique was implemented during the third meeting of the Intergovernmental Negotiating Committee for a Framework Convention of Climate Change in Geneva, Switzerland.

GLOBAL LINK OFFLINE MAIL

Global Link is an offline mail reader for EcoNet written by David Mansey-Kano (EcoNet id: **dkano**). Global Link is more than just an offline mail reader - it is also a text editor and a communications program. A nice feature of this program is that conference and mail indices are maintained on your computer, so files can be selected for downloading prior to connecting to EcoNet. And, as with any offline mail-reader, it's not only easier to use, but can also save you money in connect charges. Global Link is available for the shareware fee of **$50** and runs on IBM compatible computers.

FTP

EcoNet offers free access to selected files via ftp (file transfer protocol) to anyone with Internet access (anonymous ftp to **igc.org**). These files include several newsletters and the UNCED documents (in the **pub/UNCED** directory). For information on EcoNet contact: EcoNet, Institute for Global Communications, 18 De Boom Street, San Francisco CA 94107; **(415)546-1794** fax; **(415)322-0884** data. There is also an excellent book on this topic: ***EcoLinking: Everyone's Guide to Online Environmental Information*** written by Don Rittner.

[*J. Scott Christianson is a Research Specialist at the Mason Institute of Ophthalmology in Columbia, Missouri, and writes an environmental column for the local newspaper. Dan Wendling lives in the Washington, DC, area and is the SysOp of the* ***Coin of the Realm BBS*** *at* ***(301)585-6697****. The two have collaborated on a downloadable document titled* ***Guide to Online Resources for the Conservationist****.*
— Editor]

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cranking the wheels. While everyone online is busy waving their arms and yakking about how great it is, the learning curve for non-technical BBS operators can be enormously frustrating. The software tools to do it are not as mature as some other software niches, and things can get a bit complicated.

Rudolph Rothemund is a 37 year-old ***Star Trek*** fan and has operated a Wildcat! BBS in Wooster Ohio since May, 1989. There are several levels of Star Trek Fandom. Most of us in the latter days of our third decade have watched one or both of the "generations" of Star Trek more or less loyally. But some of the fans really get into it. Rudolph may not be fully crazed yet, but he DOES belong to a "ship" (a local fan club called Star Ship Columbia) that is part of a national "fleet", has a "captain", and his wife is sewing him some Star Trek clothes so he'll have a "uniform". Let's just say he LIKES it a LOT.

After running a BBS for three years, he learned there was now a global network linking BBS in dozens of countries specifically to carry message conferences on the topic of Star Trek. This network used FidoNet mailers to pass the conferences, so Rudy decided to join FidoNet first, and then join the Trek Net.

He soon found what all prospective fidonet members learn - joining the net is a bit beyond typing INSTALL FIDONET at the keyboard. In truth, to join this network, you have to hunt down an amazing list of little utility programs, and set up dozens of configuration files - all so they work together. As soon as you get it to work, it takes off working automatically and in a couple of weeks you forget the pain.

But Rudy became obsessed with it. It took him nearly a month, he estimates nearly **170** hours of labor, and over **$300** in long distance telephone charges. But he did get it

DIRECT DIAL

THE OZONE HOLE

Mike Mathews operates a system in New Orleans that proves you don't have to be big to be good. The two-line **THE OZONE HOLE** operates at **(504)891-3142** using PCBoard 14.5a software. The system does sort **2 GB** of files spread over **156** file areas and is graphically pretty well laid out.

The Ozone Hole is working at making the grade with connections to a number of items. They offer ***USA TODAY*** online, and sport an Internet connection through a machine at Tulane University - **rex.cs.tulane.edu**. Callers to The Ozone Hole can send and receive mail from their address at ***ozonehole.new-orleans.la.us*** and also participate in some **190** Usenet news groups carried on the system. It was here in the hole where we first encountered Rush Limbaugh news groups **alt.rush-limb** and **fan.rush-limb**. Limbaugh has enjoyed some popularity as a wildly conservative radio talk show host and now has his own 30 minute TV show each weeknight.

The main theme of The Ozone Hole seems to be sports. The system carries local message conferences for baseball, basketball, football, racquetball, running, and skydiving, and sports a door program titled Crunch League Football that is basically a fantasy football program. The system requires a **$30** annual membership fee and allows online signups via MC or Visa. If you want to see what one looks like before it grows up, this may be a comer.

CONNECTING TO FIDONET - AN ODYSSEY

Operating a BBS may look like the thundering Wizard of Oz to callers, but most operators feel more like the old man behind the curtain

done, and he decided others shouldn't have to go through this. So he wrote a **40** page document specifically on how he connected his Wildcat! system to the Fidonet and he put the entire collection of necessary files up on his **Red Phoenix BBS**. This file is excruciatingly detailed - listing directory structures, configuration files, event files, and the list of files you must have on your treasure hunt to get a system running. The effect is powerful. If you run a Wildcat! system and want to carry FidoNet echoes, Rothemund has the information all in one place complete with contact names, addresses, and telephone numbers. It's very specific, right down to U.S. Robotics HST NVRAM settings. The file is available on the system as **fidocat!.txt**

And the process has a happy ending. Rudy now carries **15** different conferences on Star Trek detritus from FidoNet and the Trek net - nearly half the number of message conferences on his single line board. Rudolph Rothemund, The Red Phoenix BBS 1:226/1260; PO Box 8102, Wooster, OH 44691; **(216)345-5807** BBS.

200,000 BOOK TITLES ONLINE

There exists within our culture a declining subset of the population that actively and avidly enjoy reading books. I suppose I'm one of them. An easy and undiscerning mark for the publishing industry, I'm probably the only one in the world who has actually read the user manual that comings with a Waring blender. Charles Stack of Parallax Microsystems Inc. of Cleveland, Ohio is likewise a book lover.

Stack actually has operated a software company for the past eight years to develop software for law offices. But in March of this year he opened a BBS catering specifically to books and readers. He calls it **Book Stacks Unlimited** and you can reach it at **(216)694-5732.**

At its core, this 12-line TBBS system is a database of books you can dial up, search for books by author, title, or subject, and order the book with a credit card. A week later it shows up on your doorstep. The key to doing such a thing is selection. Book Stacks sports approximately **200,000** titles in their database and we had no difficulty racking up another entry on the Master Card in a vote of confidence that a few more books piled up around the office on the mounds of others wouldn't destroy the militantly neat, tidy, almost obsessively orderly decor of our office.

But beyond online order entry from a usefully large collection of titles (we didn't search for anything we didn't find), this plainly presented online service is working toward building a home for book lovers. It features several discussion areas revolving around the subject of books where callers can discuss the latest titles and add their two-bits to the reviews. We found over twenty issues of a fascinating electronic newsletter titled ***Reading For Pleasure Magazine***. Edited by Cindy and Drew Bartorilla, this online publication reviews dozens of books you may have missed.

The board does have a file area but not particularly for shareware. We found a file titled **BOOKS_BD.ZIP** that lists HUNDREDS of books on the topic of BIRDS. The **BOOKS_CA.ZIP** file lists **170** different books solely on the topic of Canoeing. **BYCYCLES.ZIP** lists **80** different books on cycling. **BOOKS_TK.ZIP** lists a total of **140** different books solely devoted to STAR TREK. **CHESS.ZIP** listed **130** books on the game of chess. And so on.

Ordering books is relatively simple and straightforward. You can mark books for later ordering while you browse the database. You enter a shipping address and your credit card number to actually order. With your first order you get a free book titled the ***Book Buyer's Advisor***

listing about a thousand different book reviews in 25 categories.

The prices are unimpressive, with the books listed at their list cover price. But for each $1 in books you order, you get three "Book Marks". These book marks can then be applied to the purchase of additional books. You can get a free book worth up to $20 for example for 400 book marks. According to Stack, it works out to about a **15%** discount. Shipping charges were quite reasonable - UPS ground is a flat rate of **$3.85**. And **10%** of all profits from the system go to **Reading Is Fundamental** (RIF) a national non-profit dedicated to promoting literacy. You can return any book in good condition within 30 days for a full refund.

The system is plain in presentation, but quite easy to use. The primary sin of this BBS is youth. Online since late February, they're attracting about **35** new callers per week. As it reaches a critical mass of callers, we think it will develop into a very interesting system for book lovers, on top of the obvious utility of being able to search for and order books easily. Book Stacks Unlimited, Inc. 1375 E. 9th St., Suite 2260, Cleveland, OH 44114; **(216)861-4609** voice; **(216)694-5732** BBS.

THIS MONTH - TACOMA WASHINGTON

In our feature list this month, we examine Tacoma Washington, a mid-sized city in the upper northwest located on the east bank of the Puget Sound, just south of Seattle and northeast of Olympia. Tacoma proper houses some **176,664** warm bodies but with the area immediately around it produces a total of **586,203** according to the 1990 census. **Rich Langsford** keeps track of who's who in Tacoma BBS land and was gracious enough to share his results with us this month.

Interestingly, Langsford's list is deja vu all over again. He not only maintains a good list of local bulletin boards, he has started adding notes about the Tacoma online scene - who's meeting where and for what, BBS Saturday morning breakfasts, and so forth. Sounds like ***Boardwatch*** circa 1987. He calls the combination newsletter and list **TABBS** (Tacoma Area BBS) and it is available from his system **AmoCat BBS** at **(206)566-1155** each month.

The Tacoma area is a bit unusual. First it has a rather high ratio of bulletin boards to population with one system for each **4804** residents. But it also provides a good deal more variety in platforms. Langford counts eight Macintosh systems among his group, six Amiga boards, four Atari ST systems, four Commodore boards, and three systems that run on the aging Apple II. Actually, there is even a CP/M system still creaking along under the auspices of the Metal Message System BBS software as the Toggle BBS.

The most popular BBS software package in the Tacoma area is Mustang Software's Wildcat! BBS, with Andrew Milner's Remote Access (RA) package placing second in the "what software do we run this week" sweepstakes. And like most areas, Tacoma produces its share of interesting BBS titles. Kaptain K Mart's Blue Light Special is probably a bargain and we would expect all issues get a thorough discussion on the Dead Horse BBS.

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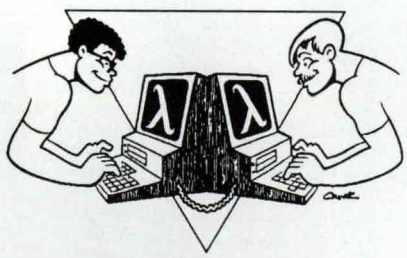

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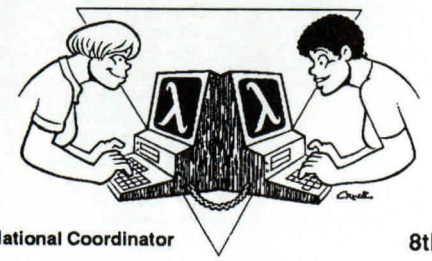

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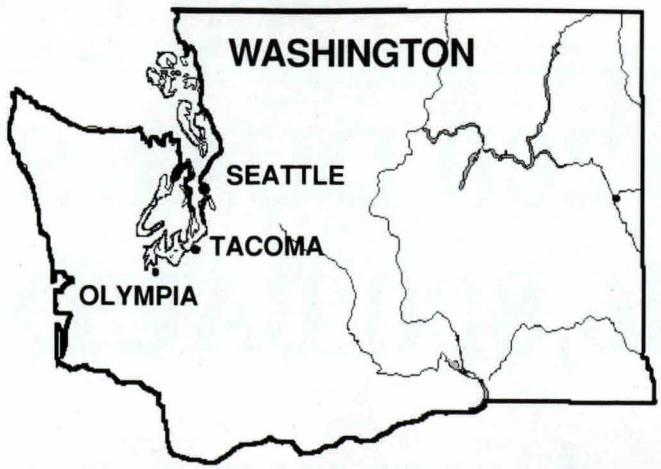
TACOMA WASHINGTON

Area Code 206 List of 122 Electronic Bulletin Boards

Courtesy Richard Langsford, AmoCat BBS 1:138/115 (206)566-1155

TITLE	PHONE	SOFT	SPEED	SYSOP
!Filemaster BBS(node1)	565-9776	Wildcat!	9600	"Delbert"
5th Avenue	847-8374	Virtual BBS	2400	"Moliere"
ABChat	848-9511	DLX	2400	Kris Engles
AmoCat BBS	566-1155	Wildcat!	9600	Rich Langsford
Arctic Net	565-9740	Opus	9600	Rob Barker
Attack Line	840-2445	QuickBBS	9600	Dave Reed
Awakening BBS	582-5579	Maximus	9600	Ron Amos
Back Gate BBS	964-2033	SuperBBS	9600	Charles Cooper
Backwoods BBS	847-5058	Spitfire	2400	"Uncle Pat"
BatCave	756-2054	Virtual BBS	9600	"Batman"
Beyond BBS	475-0402	Hermes	9600	"The Force"
Beyond Reality	564-6702	DLG Pro	9600	Bill Wolfe
Big Boys Toys	862-8896	Wildcat!	9600	Paul Kratzke
BoardRoom BBS	847-1763	RA	2400	Bill McPhail
Bridge of Sighs	952-0247	Spitfire	9600	"Sysop"
Bunny Board	841-3899	Hermes	2400	"Da Masta"
Byte Me	581-6244	Hermes	2400	"Stickman" (4p-6a)
Calc Sys	967-3606	RA	2400	Debbie Sklar
Cat's Paws	584-7895	Maximus	9600	Jim Smith
Centaur Aisle	536-6492	SuperBBS	9600	"Old Fogie"
Cesspools in Eden	756-8063	Aftershock	9600	"The Crazy One"
Club Digital	848-9629	Xenolink	2400	Steve Rowe
Collector's BBS	564-1109	QuickBBS	2400	Jack Revis
Come Sail Away BBS	964-0580	Citadel	2400	"Gravity"
Computer Factor II	848-7306	Virtual BBS	9600	Shon Sullivan
Craig's BBS	582-7970	Spitfire	2400	Craig Findley
Crossroads BBS	848-2831	QuickBBS	9600	David Reed
Death Strike	840-2251	Citadel	2400	"Striker"
Dis Array	588-2595	RA	2400	Mikel Kirk
Doomed to Failure	759-1724	Citadel	2400	"Valley Boy"
Dura Europos	588-0638	GBBS	2400	"Trajan"
Eagles BBS	531-8304	Wildcat!	9600	Leonard Blakely
Electric Flamingo	473-6561	RA	9600	Charlie Quante
Electronic Advertiser	847-3329	TriBBS	2400	Jerry Weaver
Employment Network	475-0665	SuperBBS	2400	Dave McCoy
Forgotten Realms	848-5299	Tempest	9600	"Hotrod"
FPS Technical Board	565-9465	TBBS	2400	FPS
Golden Sub II	536-3878	Citadel	2400	Dan Brinkman
Group Medical	581-9088	RA	2400	Ismail Arslangiray
Grownup's Playground	588-3792	Wildcat!	9600	Bruce Martin (ADULT)
Heaven's Door	581-3466	QuickBBS	9600	"The Pastor"
Holiday's Inn	472-1218	Wildcat!	9600	"Doc Holiday"
Huggybear's Den	582-8285	Omni 128	2400	"Huggybear"
Info Board	759-4391	Ironhenge	2400	Darin
Insanity Loves Company	565-6036	Telix Host	2400	Scott Wright
ISMC Oeric II	535-3697	SuperBBS	2400	"Starcrow"
John's Genes	756-5160	Opus	9600	John English
Keithley Komputer	759-5550	Opus	9600	Susan Cox
King's Dominion	843-2817	Opus	2400	Jeff King (7p-5a)
Lakewood Fire Dept.	840-2066	QuickBBS	9600	Dave Reed
Land of Oz	473-1788	Image	2400	"Oz"
Last Frontier	847-8168	SuperBBS	9600	Mark Pittenger
Library	565-0690	CO64	2400	"Gertrude"
Mac Air	475-4146	Hermes	2400	"The Captain"
Mandrake's World	475-6692	Searchlight	9600	Steve Wienecke
MIDI Exchange	383-8072	Forem	2400	Jack W Rice (6p-9a)
Missing Link BBS	536-3235	Searchlight	2400	Steven Hall
Misspent Youth	537-6280	PCBoard	9600	"Cyrano"
Mobike Maniac	964-5306	Spitfire	2400	Birgit Murphy
Moody Blues	846-2616	RA	2400	Bernie Schau
Night Magic	535-4746	PCBoard	9600	"Poledra"
Nightfall	565-0637	Citadel	2400	Rob Evers
Nightforce BBS	472-6967	Tempest	9600	"Swally"
NNN0GCC BBS (ham/mars)	272-6032	Wildcat!	2400	Tim Mauch(10p-4p)
North End Skyscraper	756-9689	Opus	9600	Lee Fellenberg
Northwest Exposure	922-2692	WWIV	2400	Jo Vangelder
Northwest Fishing Tips	863-2098	Maximus	2400	Rod Dills (5p-8a)
NWAP Chess Board	565-0594	Prime	2400	Doug
Omni World 128	536-9353	Omni 128	9600	"Dr. Midi"
Online Express II	581-3310	Wildcat!	2400	"Marsman"

BBS: 122
POPULATION: 586,203
AREA: 1675.6 Square Miles
BBS Per Population: 1:4804
BBS Per Area: 1:13.73 sq. mi.



TOP TITLES

Wildcat!	**19**
Remote Access	**12**
Citadel	**11**
Opus	**8**
Hermes	**8**
Spitfire	**7**
SuperBBS	**7**
QuickBBS	**6**
All Other	**44**

TITLE	PHONE	SOFT	SPEED	SYSOP
OS9 Tacoma	566-8857	RIBB	2400	Chris Johnson
Outdoor Focus	565-7730	Opus	2400	Craig Buchman
Ozone Pro Express	759-3002	BBS Express	2400	"T-Dome"
Pacific NW Archive	627-6094	Wildcat!	9600	Michael Moore
Parthenon	474-2872	Waffle	2400	Mike Singleton
PC Madhouse	581-6361	WWIV	9600	Eric Hermes
Peachy Keeno Inn	539-0804	Spitfire	9600	Gail Carlson
Pembroke Castle	474-0684	SuperBBS	9600	Lady Darlene
Pilgrim's Progress	952-4522	C-Net	0-1	"Prophet"
Purgatory	566-1827	Citadel	2400	"Pope & Angel"
Racer's Edge	863-5877	PCBoard	9600	Tim Fierro
Shooting Star][BBS	589-5906	????	9600	"Disk Crasher"
Silent Sentry	984-1048	RA	9600	Damien Latrace
Silent Sentry (node 2)	588-2285	RA	2400	Damien Latrace
Space/Time Continuum	536-1528	RA	2400	Dana Booth(8p-5:30a)
Starfleet BBS	535-5717	Hermes	2400	"Phaser"
Sub S*P*A*C*E* BBS	473-6587	BBS Express	2400	Mike Isakson
SuperShareware BBS	535-1995	Wildcat!	2400	Greg Randall
T.A.C.O. BBS	475-8084	Maximus	2400	Malcolm Clark
Tacoma Recovery	862-3815	QuickBBS	2400	Don T. (AA/12-step)
Techno Mikey's Shop	582-9393	Opus	2400	Michael Bednarczyk
Tequila Sunrise	846-1564	Wildcat!	2400	"Arrow" &"Lady Red"
The Aquarium	847-4553	Citadel	2400	Damian Johnson
The Big Easy BBS	952-7142	Wildcat!	9600	Danny Stephens
The Blue Light Special	588-3973	Citadel	2400	"Kaptain K Mart"
The Boardwalk	941-3124	Wildcat!	9600	Dave Cody
The Coffee Shop	565-6306	Omni 128	2400	"P.I."
The Cubby Hole	572-3225	Hermes	2400	"The Hermit"
The Dead Horse BBS	473-4338	TriBBS	9600	Steve Wisher(12m-6a)
The Exchange Club	964-5949	Wildcat!	2400	"Tin Man"
The Generic BBS	584-5960	Citadel	2400	"Generic Man"
The Glass Head	847-4553	SuperBBS	2400	Damian Johnson
The Halls of Justice	565-0603	DLG Pro	2400	Keith Zaback
The King's Coven	922-0789	Telegard	2400	"The King"
The Legend BBS	536-6765	RA	2400	"King Eldaron"
The Looking Glass	535-8917	Maximus	2400	Marc Blakely
The Medieval BBS	582-2023	RA	2400	"King Edward"
The Meeting Place	536-6993	Wildcat!	2400	David Kreg
The Reef	848-3371	BBS Express	9600	Dan Harris
The Right Place node 1	581-APPL	Hermes	2400	Scot Herring
The Tunnel	759-7601	Hermes	2400	Pat Nicholson
The Warped Dog	536-0423	Opus	2400	Andy Roberts
Toggle	759-7298	METL	2400	Bob Thompson
Total Access Board	472-9884	TBBS	9600	Dick Fairchild
Trauma Central	531-9309	Wildcat!	2400	"Nite Nurse"
Unicorn/NWAP BBS	472-9331	GBBS	2400	Marvin McDonald Jr.
Up Town's BBS	572-2548	Spitfire	2400	Richard & Margarita
Vanguard II	582-1185	RA	9600	John Haste
West Coast Adult Net	564-4955	Wildcat!	2400	"Foxy Lady" (ADULT)
Wood Creek BBS	536-8480	Spitfire	9600	Don Strate
Your Mom	475-8399	Citadel	2400	"B Man"
Your Name Here BBS	564-5303	Citadel	9600	"Zake Zuke"

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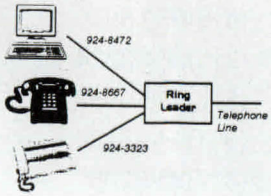

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BOARDWATCH

LIST OF BBS LIST KEEPERS

This listing comprises a list of those who compile and maintain lists of bulletin boards, either by topical category, or by some geographic area or definition - often by area code. The primary bulletin board system where the list can be downloaded electronically is also included.

BBS LIST TOPIC	LIST AUTHOR/EDITOR	CONTACT BBS	TELEPHONE
96 List - 9600+bps BBS	Ken Sukimoto	Downtown BBS	(213)484-0260
AC 516 Free Shareware BBS	Harold Stein	Long Island Exchange	(516)385-7882
Airline Pilot/JUMPSEAT BBSs	Rex Chadwell	ChicAAgo Hangar	(708)980-1613
Apple II BBS with Internet con	Morgan Davis	pro-sol	(619)670-5379
Area Code 215 PA and 609 NJ	Ron Brandt	Satalink BBS	(215)364-3324
Area Code 517 - Mid-Michigan	Rick Rosinski/SAMM	Wolverine BBS	(517)695-9952
Arkansas Area 501	Bob Underdown	The Gaslight BBS	(501)444-8420
ASP BBS Member List	Bob Ostrander	PBS-BBS	(317)856-2087
Astronomy/Space BBS	John Pickens	Starbase III	(209)432-2487
Atlanta Area 404	Rodney Aloia	INDEX System	(404)924-8472
Atlanta Area 404	Online Atlanta Society	OASIS	(404)627-2662
Austin Area BBS List AC 512	Michael Allen Menoskey	-=ACE*BBS=-	(512)258-9989
Autocad Related BBS	Jason Osgood	Alacrity BBS	(206)643-5477
Baltimore Area 301	Phillip Bailey	Baltimore BBS News	(301)633-7870
BBS With Handicapped Focus	Bill McGarry	Handicap News BBS	(203)337-1607
Black Issue BBS	Arthur McGee	BDPA Bay Area BBS	(707)552-3314
California AC 310	Jim Walton	Illusions BBS	(310)804-3324
Central California AC 209	Jack Porter/Madera UG	Zen Den Systems	(209)675-8436
Central California Area 805	Larry Honore	His Board	(805)652-1478
Chicago	David Nathan	HURK BBS	(708)801-0823
Chicago	Colby Jordan/Peter Anvin	Stillwaters	(708)403-2826
Cleveland Area 216	Eric Rickin	Wine Cellar	(216)382-2558
CompuCom Modem BBS List	Thomas Weathers	Referral Market BBS	(803)297-4395
Computer Shopper BBS List	BBS Press Service	CS List BBS	(913)478-3088
Connecticut AC 203	Kevin Brook	Creative Edge BBS	(203)743-4044
Conservation/Nature BBS List	D.Wendling/JS Christianso	Osprey's Nest	(301)989-9036
Dallas/Ft Worth Area 214/817	Mark Robbins	Second Sanctum	(817)784-1178
Darwin National BBS List	Meade Frierson	USBBS Update Line	(202)547-3037
Desktop Publishing BBS	Frank Atlee	Infinite Perspective	(301)924-0398
Detroit Area 313	Horst Mann	Tony's Corner	(313)754-1131
Ecology/Conservation BBS	Bob Chapman	EarthArt BBS	(803)552-4389
Engineering Related BBS	Arthur Petrzelka	Computer Plumber	(319)337-6723
Geneology Related BBS	Richard A. Pence	NGS-CIG	(703)528-2612
Graphical User Interface BBS	David Shapiro	The Gooey (GUI) BBS	(212)876-5885
Ham/Amateur Radio BBS	Stan Staten	3WINKs BBS	(301)590-9629
Handicapped Issues BBS	Richard Barth	HEX BBS	(301)593-7357

BBS LIST TOPIC	LIST AUTHOR/EDITOR	CONTACT BBS	TELEPHONE
Houston Area 713	David E. Wachenschwanz	Atomic Cafe BBS	(713)530-8875
Kansas City Area 816/913	Roy Timberman	Sound Advice	(816)436-4516
Kitsap County Washington	Michael Schuyler	Quicksilver BBS	(206)780-2011
List of Gay/Lesbian BBS	Eric Blair	S-TEK BBS	(514)597-2409
Macintosh BBS	Bill Taylor	Fort Mill Tabby	(803)548-0900
Medical Issues BBS	Edward Del Grosso	Black Bag	(302)731-1998
Milwaukee Area 414	Jay Jadofsky	Priplanus	(414)442-0170
Minnesota Twin Cities AC 612	Barry Watson	Abiogenetic BBS	(612)489-7983
NAPLPS Graphics BBS	Ed Pimentel	IHBC BBS	(404)498-4254
National 800 Number BBS List	Michael Long	Hayes Online	(800)874-2937
National Adult BBS List	Clayton Manson	Titan BBS 1:3612/140	(904)476-1270
National BBS List	DP McIntire/Beth Spotts	Ameriboard	(412)349-6862
New Jersey Area 201/609/908	Wayne R. Morton	Praedo BBS	(609)953-0769
New Orleans BBS List	Jeff Jones	Southern Star BBS	(504)885-5928
Ontario Area 705	Alex Draper	Cottage Country BBS	(705)835-6192
Open Access UNIX Site List	Phil Eschallier	LGNP1 (login:BBS)	(215)348-9727
Orlando Florida AC 407	Matt Drury	London BBS	(407)423-5226
OS/2 BBS Systems	Pete Norloff	OS2/Shareware BBS	(703)385-4325
OS/2 Related BBS	Dave Fisher	LiveNet 1:170/110	(918)481-5715
Portland Oregon BBS	Lisa Gronke	DawGone Disgusted	(503)297-9145
Raleigh NC Area Code 919	Mike Stroud	Micro Message Svc.	(919)779-6674
Republic of South Africa	Henk WOlsink	Catalyst BBS	(041)34-1122
Rhode Island Area 401	Mike Labbe	Eagle's Nest	(401)732-5292
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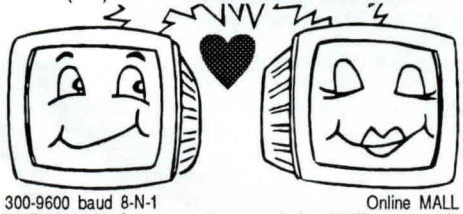

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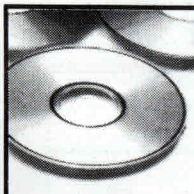

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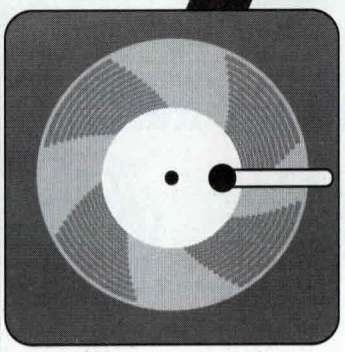

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MAJOR BBS	User Six-Pack	Call
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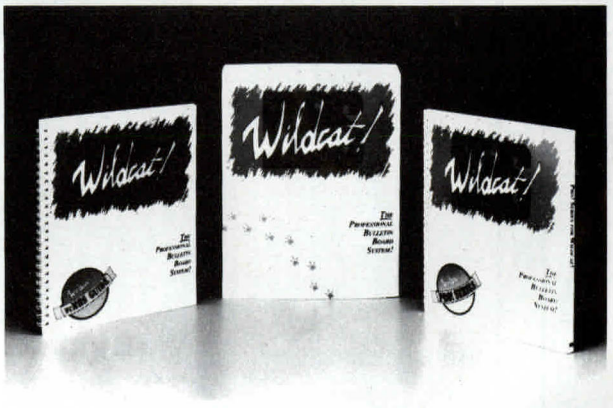
WILDCAT!	Single Line BBS	99.00
WILDCAT!	1-10 Line BBS	199.00
WILDCAT!	PRO! Series (Utilities)	89.00
DIGIBOARD	8 Port Communications Card	449.00
CD-DISCS	Shareware	89.00



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BOARDWATCH MAGAZINE

NATIONAL LIST OF ELECTRONIC BULLETIN BOARDS AND ON-LINE INFORMATION SERVICES - DECEMBER, 1992

SERVICE	PHONE	DESCRIPTION	SPONSOR/SYSOP	LOCATION
65' North	(907)452-1460	DESQview Utilities File Distribution Network 1:17/38	Peter Stern	Fairbanks ,AK
ADA 9X Project Bulletin Board	(800)232-9925	ADA Programming Language Revisions and News	Chris Anderson/Susan Carlson	Eglin AFB ,FL
ADA Information Clearinghouse	(703)614-0215	Information on ADA Programming Language/Military Specs	Department of Defense	Washington ,D.C.
Advanced Data Services Inc.	(301)695-9116	22 line PCBoard with 5.5 GB of Files	Blaine Brodka	Frederick ,MD
Albuquerque ROS	(505)299-5974	36000 files/USA Today/Tradewars/Online Games	Steven Fox	Albuquerque ,NM
America's Suggestion Box	(516)471-8625	BBS Devoted to Collecting and Distributing Consumer Feedback	Joseph G. Jerszynski	Ronkonkoma ,NY
American Cybernetics BBS	(602)968-1082	Multi-Edit Product Support BBS	American Cybernetics	Tempe ,AZ
ANARC BBS	(913)345-1978	World Radio/TV Handbook - Short Wave Freq Lists/Scheds.	Assoc. of North American Radio Clubs	,KS
APCUG - GlobalNet	(408)439-9367	Association of PC User Groups - Over 2000 UG officers	Paul Curtis/APCUG	Scotts Valley ,CA
Applied Modeling Research RBBS	(919)541-1325	Environmental Protection Agency Atmospheric Models	William Peterson/EPA	Hurdle Mills ,NC
Aquila BBS	(708)820-8344	6 GB 25 Nodes Fidonet/Interlink/Metronet MCe IL/CHI Graphics	Kevin Behrens/Steve Williams/Doug Bell	Aurora ,IL
AST Technical Services BBS	(714)727-4723	Superb support system for AST Computer Products	AST Research Inc.	Irvine ,CA
AT&T Support BBS	(908)769-6397	Support for PC 6300 and Other AT&T PC Models	American Telephone/Telegraph PC Division	Plainfield ,NJ
ATI Support BBS	(416)756-4591	Support for ATI Modems and Video Cards	ATI Technologies	Scarborough ,Ontario
Atomic Cafe BBS	(713)530-8875	Houston Area BBS list and Connect! Magazine	David Wachenschwanz	Houston ,TX
Attention to Details	(714)681-6221	Utilities/ASP/Patriquin Utils/Protocols	Clint Bradford	Mira Loma ,CA
Audiophile Network	(818)988-0452	High-end Audio Components, Music, Video Reviews	Guy Hickey/Quatre Speakers	Van Nuys ,CA
Automobile Consumer Services	(513)624-0552	New Car Pricing Reports - Used Car Value Reports	Automobile Consumer Services Inc.	Cincinnati ,OH
AviTechnic 1:261/662	(301)252-0717	Software Distribution System - BBS Utilities	Tom Hendricks	Lutherville ,MD
BBS America	(214)680-3406	Home of DFW Online Electronic Newsletter	Jay Gaines	Richardson ,TX
BBS Press Service	(913)478-9239	Home of Online Digital Music Review	Alan Bechtold/BBS Press Service	Topeka ,KS
BCS BBS	(310)821-4471	Los Angeles' First Super BBS Under Development	Jim Lee	Los Angeles ,CA
Best Friends BBS	(714)828-7093	DLX Multiline Chat/Match Social/Sexual	Ann and Joe Wiseman	Fountain Valley ,CA
Beyond Eternity	(310)371-3734	Home of EEEK! Bits - Weekly Electronic Trivia Magazine	J. Black/K. Taghadossi	Torrance ,CA
Big Peach BBS	(404)446-6650	Home of Automenu and Treeview Software	Marshall Magee/Magee Enterprises	Norcross ,GA
Bird Info Network	(303)423-9775	Breeding, Raising, Taming, Exotic Birds	Terry Rune/Dave McClauggage	Arvada ,CO
BMUG BBS	(510)849-2684	Support for Macintosh owners - files - conferences.	Berkeley Macintosh Users Group	Berkeley ,CA
Boardwatch Magazine Online Info	(303)973-4222	Distribution Service for USA Today/Boardwatch/Newsbytes	Boardwatch Magazine	Littleton ,CO
Book BBS	(215)657-6130	Information on 2000 Computer Books - 800 order number	Business & Computer Book Store	Willow Grove ,PA
Borland Download BBS	(408)439-9096	Utilities, Macros, Programming Examples for Borland Products	Borland International/Mike Fitz-Enz	Scotts Valley ,CA
Bruce's Bar & Grill	(203)236-3761	24-line Social System - Chat - Games - Downloads	Bruce Lomasky	West Hartford ,CT
Bucks Telematics 273/201	(215)493-5242	Local, National, International Message Conferences	Richard Press	Yardley ,PA
C.A.R.L Library Service	(303)758-1551	Citations to 4 Million Texts in Colorado Library System FREE	Colorado Alliance of Research Libraries	Denver ,CO
CAD/Engineering Service	(615)824-4938	Computer Aided Design File Distribution Network 1:116/32	Stan Bimson	Hendersonville ,TN
Canada Remote Systems	(416)798-4713	23GB/400000+ files, 3500 Conf's,USENET, IBM/Amiga/Mac	Neil Fleming/Jud Newell	Mississauga ,Ontario
Capital PC User's Group BBS	(301)738-9060	One of the oldest PC User's Groups - 5500 members	Capital PC Users Group/Roger Fajman	Rockville ,MD
Cardz BBS	(604)734-5800	Customer Support for Cardz Computers and Fracterm,Inc.	John Smith	Vancouver ,BC
Castle Tabby 107/412	(908)988-0706	Home of TABBY Fidonet Interface Program for Apple Macintosh	Michael E. Connick	Bradley Beach ,NJ
Celebration Station	(207)374-5161	Adventure Games, Chat, and Sigs - Children	Noel Stookey (Paul of Peter,Paul & Mary)	Blue Hill Falls ,Maine
Census Bureau Office Automation	(301)763-4576	Microcomputers and Office Automation	US Dept. of Commerce/Nevins Frankel	Suitland ,MD
Central Point Software	(503)690-6650	PC Tools - Central Point Anti-virus support board	Central Point Software Inc.	Beaverton ,OR
Channel 1	(617)354-8873	70-line PCBoard - 8 GB Files - Internet - 1000's msg. confs.	Brian Miller/Tess Heder	Cambridge ,MA
Chicago SysLink	(708)795-4442	Special Interest Areas for Ferret/Pet Owners.TRS80/Aviation	George Matyaszek	Chicago ,IL
chinet	(312)283-0559	UNIX System offering Internet Mail	Randy Suess	Chicago ,IL
Classi Computer Fieds	(317)359-5199	Online System for Classified Advertisements	Steve Edsall/Trader Newspaper	Indiannapolis ,IN
Classified Connection BBS	(619)566-7347	Giffy Girls - Nude GIF Images of the Girl Next Door	Bill Kennon	San Diego ,CA
Cleveland Freenet	(216)368-3888	Cleveland City Info/Public Library - Free Internet Mail Box	Case Western University/AT&T/Ohio Bell	Cleveland ,OH
CocoNet	(619)456-0815	CocoNet Support/Demo - Hires Graphics BBS for Unix Systems	Brian and Patricia Dear	La Jolla ,CA
Comm-Post, The 104/666	(303)534-4646	Astronomy - 725+ MB of Files	Brian Bartee	Denver ,CO
Community News Service (CNS)	(719)520-5000	News and Entertainment - 17 Lines Community Focus	Klaus Dimmler	Colorado Springs ,CO
CommunityLink @DCWAS	(703)765-0501	DC Tour Info. & Help,Online Publications,Treknet,Fidonet	Wayne Rutledge/Bob Burnett	Alexandria ,VA
Compact Audio Disk Exchange	(415)824-7603	Buy/Sell/Trade Compact Audio Disks Online	Wayne Gregori	San Francisco ,CA
Computer Business Services	(714)396-0014	Book/Publishing Consultant Nick Anis' BBS	Nick Anis Jr.	Diamond Bar ,CA
Computer Garden	(301)546-1508	Treasure Hunting - Metal Detectors - Online Catalog	Milford P. Webster	Salisbury ,MD
Computerized Bulletin Board Sys	(708)849-1132	First Electronic Bulletin Board - Creator of XMODEM Protocol	Ward Christensen	Chicago ,IL
Computing Canada Online	(416)497-5263	Adjunct to Excellent Canadian PC Newspaper	Computing Canada Newspaper	Willowdale ,Ontario
Corporate Data Exchange (CDX)	(609)683-4422	PR Newswire/ Business Wire. Logon: hello user.cdx	LaFountain Research Corp/Tad LaFountain	Princeton ,NJ
Crosstalk Communications BBS	(404)740-8428	Product Support for Crosstalk for Windows/MK4/XVI	Digital Communications Associates	Roswell ,GA
Cul-de-Sac Bar & Grill	(508)429-1784	Multiline Service - Ham Radio - Humor - TDBS Applications	Pete White	Holliston ,MA
CyberStore - a COCONET BBS	(604)526-3676	All lines to v.32bis/v.42/v.42bis. CyberTools for BBS'es	CyberStore Online Info. Systems Inc.	New Westminster ,BC

Dark Side of the Moon	(408)245-7726	Home of WAFFLE, Unix UUCP BBS Software for DOS and UNIX	Thomes E. Dell/Darkside International	Mountain View	CA
Data Core BBS	(310)842-6880	25 line Major BBS	Matthew Schoen/Delta Enterprises	Los Angeles	CA
DataLink RBBS System	(214)394-7438	Weather Satellite Imaging, NOAA Satellite Tracking-AMSAT-NA	Dallas Remote Imaging Group/Jeff Wallach	Carrollton	TX
Dawg Byte	(615)385-4268	ANSI Art Club 1:116/29	Kevin Snively	Nashville	TN
Denver Exchange, The 104/909	(303)623-4965	Denver's Most Diverse Gay/Lesbian Info Service	James Craig	Denver	CO
DragonNet 386/451	(409)765-5459	Multiline MAJOR BBS with 4 GB - 64 lines Interactive Games	Robert Michael/Dragon Profit Systems	Galveston Island	TX
EarthArt BBS	(803)552-4389	Wildlife/Conservation Art Gallery GIF Images	Ambassador Wildlife Gallery/Bob Chapman	North Charleston	SC
East Bay X-Change 372/888	(803)556-7485	Home of XRS Offline Mail Reader	Mike Ratledge	McClellanville	SC
Economic Bulletin Board	(202)377-3870	Economic Statistics/GNP/CPI/Employment, Trade Opportunities	US Department of Commerce	Springfield	VA
Ed Hopper's BBS	(404)446-9462	Home of uuPCB - PCBoard Utility for UUCP Connections	Ed Hopper	Pearland	TX
Ed-Net	(604)988-4442	Vancouver School Board Multi-Line Educational Network	Barry Macdonald	Vancouver	BC
Elecric Ideas Clearinghouse	(206)586-6854	Energy Efficiency Efforts In Pacific Northwest-HydroElec	Bonneville Power Administration WSE	Olympia	WA
Electronic Publishers BBS	(503)624-4966	News-Finance-Sports-Games-2GB File Library	Brian Cash	Portland	OR
Electronic Zone, The	(412)349-3504	Specializing in Hypertext	William R. Forbes	Indiana	PA
Energy Info Admin E-Publications	(202)586-8658	Variety of Petroleum/Coal/Electricity Energy Statistics	US Department of Energy	Washington	D.C.
eSoft Product Support BBS	(303)699-8222	Home of The Bread Board System (TBBS) BBS Software	Phil Becker/eSoft Inc.	Aurora	CO
Event Horizons	(503)697-5100	64 Line Digitized Graphics Image Library - Adult .GIF files	Jim Maxey	Lake Oswego	OR
Exchange BBS, The	(713)521-2191	Largest Gay/Bi/Lesbian Multiline BBS in Houston	James Craig/John Fields	Houston	TX
EXEC-PC	(414)789-4210	Largest BBS in US - 230 Lines - 70,000 files - 7 Gigabytes	Bob Mahoney	Elm Grove	WI
Executive Network	(914)667-4567	Interlink Netmail National Host - Multiline PCBoard System	Andy Keeves	Mt. Vernon	NY
Eye Contact BBS	(415)255-5972	22 line Oracomm - Gay Issues - Popular Chat System	Bill Montgomery	Mill Valley	CA
Falken Support BBS	(703)803-8000	Support for FALKEN software - 16 lines - doors - chat	Herb Rose	Woodbridge	VA
Farwest BBS	(604)381-3934	Large Western Canada Galacticomm Info System	Ren L'Ecuyer	Victoria	BC
FAX/Satellite Services BBS	(619)224-3853	NOAA Weather Satellite Images - Russian/Japanese Sat Pics	Scotty Olson	San Diego	CA
FCC Public Access Link	(301)725-1072	Equipment Authorization Status Advisory Service	Federal Communications Commission	Columbia	MD
Federal Job Information Center	(313)226-4423	Federal Job Opportunity Lists available online	US Office of Personnel Management	Detroit	MI
FEDLINK ALIX II	(202)707-4888	Info on Federal Libraries -Excerpts Library of Congress News	Federal Library Information Network	Washington	D.C.
Fido Software BBS 1:125/111	(415)863-2739	The First Fido BBS and home of Fido BBS 12s	Tom Jennings	San Francisco	CA
Fido Tech Stand	31-30-735900	Fidonet Technical Information for Holland	J.J. van der Maas	Utrecht	Holland
FOG City BBS 125/10	(415)863-9697	Gay Community BBS - AIDS Info - Desktop Publishing - MACs	Bill Essex	San Francisco	CA
Fred the Computer	(508)872-8461	Newspaper BBS. Wierdnet Newswire. List of MA Libraries	Middlesex News-Adam Gaffin	Framingham	MA
FreeBoard BBS, The	(804)744-0797	Desktop Publishing File Distribution Network 1:264/212	Bill Hunter	Midlothian	VA
FSBBS Prototype System	(805)543-8227	Home of FSUUCP and FSBBS - Unix Communications for DOS	Chris Ambler, Fubar Systems	San Luis Obispo	CA
Fun Connection	(503)753-8431	Multiline Entertainment - 8 Lines Games/Chat/News	Vincent Reece	Corvallis	OR
Garbage Dump, The	(505)294-5675	Online Chat Service - Adventure Games - National Chatlink	Dean Kerl/Datasafe	Albuquerque	NM
Gateway Communications BBS	(714)863-7097	Novell Netware/TCP-IP Shareware Utilities	Gary Gabrick	Irvine	CA
Gateway On-Line	(313)291-5571	Interactive Chat,MulitiplayerGames,Usenet/Internet,E-mail	Jeff Breitner/Bill Mullen	Rockwood	MI
GDP Technologies	(303)673-9470	Outstanding IBM Shareware on a small system	Tom Getty's	Lafayette	CO
General, The	(619)281-8616	Popular File Library - GIF Images	Marc Teitler	San Diego	CA
GISnet BBS	(303)447-0927	Graphics Information Systems/Mapping topics	Bill Thoen	Boulder	CO
GLIB	(703)578-4542	Gay and Lesbian Information Bureau - 11 Lines - 9600 bps	Community Educational Svcs. Foundation	Arlington	VA
GPO WINDO Online Service	(202)512-1387	Fed Information from EPA, DOE, State Department - others.	US Government Printing Office	Washington	DC
Greenpeace Environet	(415)512-9108	Ecological and Peace Issues - Disarmament/Toxics/Wildlife	Dick Dillman/Greenpeace	,	
Hayes Advanced Systems Support	(800)874-2937	Customer Support Line for Hayes Customers. V-series/Ultra	Hayes Microcomputer Products	Norcross	GA
Heartland Free-net	(309)674-1100	Community Online Service - Free Internet E-Mail Boxes	Peoria County Board/Bradley University	Peoria	IL
Herpnet/Satronics TBBS	(215)698-1905	Reptile and Amphibian Studies - Poison Snakes/Toads/Fish	Mark Miller	Philadelphia	PA
HH Info-Net BBS	(203)246-3747	MS Windows and OS/2 Files our specialty	Lee Winsor	New Hartford	CT
HoloNet	(510)704-1058	National Access,INTERNET,USENET,CHAT,GIFS,FILES	Information Access Technologies, Inc.	Berkeley	CA
HouseNet BBS	(410)745-2037	Home Fixup/Repair/Renovation Tips, Advice, and Articles	Gene and Katie Hamilton	St. Michaels	MD
Hysterics	(613)231-7144	Amiga File Distribution Network 1:163/109	Russell McOrmond	Ottawa, Ontario	,
IBM National Support Center BBS	(404)835-5300	IBM PC User Groups Database - Newsletter Exchange	IBM National Support Center	Atlanta	GA
Inbound/Outbound/Teleconnect	(212)989-4675	Telephone Sales Trade Magazine Online Service	Harry Newton Publications	New York	NY
Index Systems	(404)924-8414	Excellent list of Atlanta BBS systems online	Rodney Aloia	Marietta	GA
Infinity World	(606)278-2002	8 line Galacticomm System - Many good text publications	Daniel Diachun	Lexington	KY
InfoHost Demo BBS	(201)335-2253	Demo BBS for InfoHost BBS Software - Multiline - Database	A-Comm Electronics Inc.	Hasbrouch Heights	NJ
Infolink for Upper East Tenn.	(615)434-2551	Space Database - Online Store - Chat	John Williams	Johnson City	TN
Inns of Court, The	(214)458-2620	LAN Related Files and Utilities 1:124/6101	Arthur Geffen	Dallas	TX
Intel PCEO Support BBS	(503)645-6275	Support for Intel PC Products - Inboard 386/AboveBoard 286	Intel Corporation PCEO Division	Hillsborough	OR
Invention Factory	(212)274-8110	46 Lines - 100 Directories - Full Usenet Feed - 8.2 GB	Mike Sussell	New York	NY
Investor's Online Data	(206)285-5359	Online Investment/Stock Market Information/Tech Analysis	Don Shepherdson	Bellevue	WA
JAG-NET	(703)325-0748	Navy Judge Advocate General's Information Network	US. Dept. of Navy / Chris Buechler	Arlington	VA
JDR Microdevices BBS	(408)559-0253	Online Hardware Order - Catalog - 1.1 GB Files - Quizzes	JDR Microdevices	San Jose	CA
JOBBS	(404)992-8937	Online Job Listings - 2186 Technical Pos. - 10,000 Corps.	Alpha Systems Inc./Bill Griffin	Roswell	GA
Keith Graham Shareware Support	(914)623-0039	OPTIK, TEXT2COM, CBOOT, very good shareware utilities	Keith P. Graham	Nyack	NY
KIMBERELY BBS	(612)340-2489	Prime Rate-Fed Funds-T-Bill-Discount Rate-Economic Data	Federal Reserve Bank of Minneapolis	Minneapolis	MN
King's Market BBS 104/115	(303)665-6091	400 MB Books, Writers Area - TRS 80 Support	Jim and Karen Burt	Boulder	CO
LANtastic BBS	(602)293-8065	Support for LANtastic local area network	Artisoft Inc.	Tucson	AZ

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BOARDWATCH MAGAZINE

NATIONAL LIST OF ELECTRONIC BULLETIN BOARDS AND ON-LINE INFORMATION SERVICES - DECEMBER, 1992

SERVICE	PHONE	DESCRIPTION	SPONSOR/SYSOP	LOCATION
Late Night Software 125/555	(415)695-0759	Home of UFGATE - Software to connect PCs to UUCP/Usenet	Tim Pozar	San Francisco ,CA
Leading Edge Auto Info Line	(508)836-3967	Support for Leading Edge Computer Owners	Leading Edge Computer	Westborough ,MA
LegalEase	(509)326-3238	Legal issues/Forms - Law BBS List	Bill Sorcinelli	Spokane ,WA
MAC-LINK	(514)486-8959	Macintosh Oriented Support BBS - 6 Lines - Infomat/BIX	Mark Smith	Montreal ,Quebec
Macalot Bulletin Board	(412)846-5312	Support for Second Sight BBS Software for Macintosh	Jeff Dripps/FreeSoft Company	Beaver Falls ,PA
MacInternational	(803)798-3755	Largest MAC BBS on East Coast	Ralph Yount	Columbia ,SC
Magpie BBS	(212)420-0527	Support/Demo System for Magpie BBS/Conferencing Software	Steve Manes	New York ,NY
MaxiHost Support BBS	(209)836-2402	MaxiHost BBS - small, very easy to run BBS	Don Mankin	San Ramon ,CA
McAfee Associates BBS	(408)988-4004	Computer Virus Information - VIRUSCAN and CLEANUP	John McAfee/CVIA	Santa Clara ,CA
METRO Online Entertainment	(212)831-9280	32 line DLX with City Guide/Ski Database - Matchmaker - Chat	Bruce Kamm/Metro Online Services	New York City ,NY
Micro Foundry, The	(415)598-0398	2.2 GB Downloads - Your Online Software Source - Boardwatch	Thomas Nelson/Clockwork Software	San Jose ,CA
Micro Message Service	(919)779-6674	USA Today/Boxoffice Magazine - Large Download Area	Mike Stroud	Raleigh ,NC
Micro Tech BBS	(314)334-6359	Support for OSIRIS Multiline BBS Software - IRIS Mail	Micro Tech	Cape Girardeau ,MO
Microlink B	(303)972-9600	Over 2.5 GB of IBM Software - Multiline - USA Today News	Girard Westerberg	Littleton ,CO
Microrim Technical Support BBS	(206)649-9836	Support for Popular R:Base Relational Data Base System	Microrim Corporation	Redmond ,WA
Microsoft Download BBS	(206)936-6735	Windows Technical Notes and Support Information	Microsoft Corp/Scott J. Honaker	Bellevue ,WA
Microsystems Software Inc.	(508)875-8009	HandiWare Software for Handicapped - CodeRunner C Utilities	MSI - Reed Lewis	Framingham ,MA
Minnesota Spacenet	(612)920-5566	Minnesota Space Frontier Society - NASA News	Ben Husset	Minneapolis ,MN
MOG-UR'S EMS, The	(818)366-1238	5 Lines - 8 Networks CD-ROMS - 2.8 GB Hub Services HST/V.32	Tom Tcimpidis	Granada Hills ,CA
Mountain Air BBS	(703)427-0226	Adult Based BBS	Edward Lee Wood, Jr.	Roanoke ,VA
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N8EMR Ham BBS	(614)895-2553	login:hbbs HAM Radio/AMSAT Unix System - Satellite/Packet	Gary Sanders	Westerville ,OH
NAPLPS Graphics BBS	(613)727-5272	NAPLPS Graphics Terminal and Editor Software	MicroStar Corp.	Nepean ,Ontario
NARDAC BBS	(804)445-1627	Zenith Computer Support - List of Federal Micro User Groups	Navy Regional Data Automation Center	NAS Norfolk ,VA
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Nashville Exchange	(615)383-0727	12 line TBBS - Games/TDBS Software Development 1.8 GB	Ben Cunningham	Nashville ,TN
National Genealogical BBS	(703)528-2612	Family History - Genealogical Research - Gravestone Haunting	National Genealogical Society	Arlington ,VA
NAVWESA	(202)433-6639	Naval Weapons Engineering Support	Dept. of Navy / Bill Walsh	Washinton, D.C. ,.
Netcom Internet Guest System	(408)241-9760	Internet Access System - type "guest" at login for info.	Netcom Online Communications Services	San Jose ,CA
Network World Bulletin Board	(508)620-1178	LAN and WAN Issues and Technology	Network World Magazine/CW Communications	Framingham ,MA
Neuropsychology Bound 157/3	(216)356-1431	Support Groups for Disabled/Physically Impaired	Butch Walker	Rocky River ,OH
NIST ACTS	(303)494-4775	Automated Computer Telephone Service - Sync PC to NBS Time	Nat. Institute for Standards/Technology	Boulder ,CO
Nixpix	(303)920-1263	Large Library of Adult GIF Graphics Images	Nick De Wolf	Aspen ,CO
NOAA Space Environment Lab	(303)497-5042	Solar Flare/Geomagnetic Data Online	National Oceanographic/Atmospheric Admin	Boulder ,CO
NoGate Consulting	(616)530-3392	Home of PAK archive utility	Mike Neuhaus Gus Smedstad	Grand Rapids ,MI
Numisnet	(301)498-8205	Collecting of Coins, Medals, and Exonumia	The Mitchell Group	Laurel ,MD
OAQPSTTN	(919)541-5742	Air Quality Planning and Standards Technology Transfer Net	Environmental Protection Agency	Research Triangle Park ,NC
OASIS BBS	(404)627-2662	Home of Atlanta Bulletin Board List - ABBL	Robert Orr/Online Atlanta Society	Decatur ,GA
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Odyssey	(818)358-6968	Adult Multiline Chat System - Games - Magazines - Downloads	Michael Allen	Monrovia ,CA
OERI BBS	(800)222-4922	Educational Statistics and Data - Performance Stats -	US Department of Education	Washington ,D.C.
Old Colorado City Communications	(719)632-4111	Political Discussions - Unix UUCP Public Access - Multiline	Dave Hughes	Colorado Springs ,CO
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Oracle PC	6108 260-6222	South Australian TBBS Multiline System	Don Crago	Pooraka South Australia ,
Oracomm Support BBS	(619)346-1608	Sales and Support for Oracomm Multiline BBS Software	Surf Computer Services	Rancho Mirage ,CA
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P.D.S.L.O. BBS	(516)938-6722	Home of THE LIST National BBS List	James Toro	Hicksville ,NY
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Public Data Network	(503)474-6662	64-line System with $2.50/hour Local Access	Tony Javoric/Public Data Network	Grants Pass ,OR
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QuickBBS Support BBS 363/34	(407)896-0494	Product Support for QuickBBS Software	Richard Creighton/Steve Gabrilowitz	Orlando ,FL
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Rusty & Edies	(216)726-0737	Large ML PCBoard run by Husband and Wife - NFL/Tradewars	Rusty and Edwina Hardenburgh	Boardman ,OH
Salt Air BBS	(801)261-8976	Home of PCBoard BBS Software - National List of PCB Sys	Clark Development Company/David Terry	Murray ,UT
San Diego NeXT User's Group BBS	(619)456-2522	Support for NeXT Computers	Brian Dear/San Diego NeXT User's Group	San Diego ,CA
Science Resource Studies BBS	(202)634-1764	Federal R&D Budget - Technical Labor Market Statistics	National Science Foundation	Washington ,D.C.
SDN Project, The 1:141/840	(203)634-0370	The Original Software Distribution Network	Ray Kaliss	Meriden ,CT
SEAboard!	(201)473-1991	Support system for ARC, SEADOG, and AXE software.	System Enhancement Associates	Wayne ,NJ
Seagate Technical Support BBS	(408)438-8771	Installation and Specifications for Hard Drive Models	Seagate/Bill Rudok	Scotts Valley ,CA
Searchlight BBS	(516)689-2566	Support system for Searchlight BBS Software	Searchlight Software	StonyBrook ,NY
SemWare Support BBS	(404)641-8968	Home of QEdit - A Superb Shareware Text Editor	Sammy Mitchell/SemWare Software Products	Marietta ,GA
SENDIT	(701)237-3283	North Dakota K-12 Educational Net-telnet sendit.nodak.edu	Gleason Sackman/NDU	Fargo ,ND
SIGCAT BBS	(703)648-4168	CD-ROM /Optical Publishing Info - Lists of Gov. CD Data	SIG on CD-ROM Applications and Technol.	Gathersburg ,MD
Sistema Profesional Informacion	525 590-5988	Largest BBS in Mexico - Spanish Language TBBS	Tecnologia Uno Cero S.A. de C.V.	Mexico City ,
Skeleton Closet, The	(804)671-8547	Geneology Programs File Distribution Net 1:271/23	Debbi McKay	Virginia Beach ,VA
Society for Technical Comm. BBS	(703)522-3299	STC Job Service, Freelance Registry - Technical Writers	Society for Technical Communication	Washington ,D.C.
Software Creations BBS	(508)368-4137	Home of Apogee Software/Commander Keen Series	Dan Linton	Clinton ,MA
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Spare Parts 1:130/38	(817)540-3527	Windows Distribution Network - Windows utilities/files	Larry Mundy	Bedford ,TX
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Starlink BBS	(915)235-4818	Technical Support for Predictive Maint Customers	John Land	Sweetwater ,TX
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Stillwaters BBS	(708)403-2826	Home of Stillwaters Chicagoland BBS List - over 500 systems	Colby Jordan (BBS) Peter Anvin (list)	Orland Park ,IL
Superdemocracy Foundation BBS	(305)370-9376	Online Democracy/Political Culture for the Future	Tim Stryker	Davie ,FL
TAXACOM	(716)896-7581	Botany, Herbaria, FLORA ONLINE Newsletter, Latin Translation	Clinton Herbarium, Buffalo Museum	Buffalo ,NY
TEAMate Unix Bulletin Board	(310)318-5302	Demo/Support for TEAMate BBS Software for Unix	Bob Baskerville/MMB Development Corp.	Manhattan Beach ,CA
Telegodzilla	(503)621-3746	Home of ZModem File Transfer Protocol/YModem/YAM	Chuck Forsberg/Omen Technology Incorp.	Portland ,OR
Telepath	(415)358-8641	DBMS/Dr. Dobbs Journal Magazine Online Service	M&T Publishing	Redwood City ,CA
Telix Support BBS	(919)481-9399	Support Service for Telix Communications Software	Jeff Woods/deltaComm Development	Cary, NC
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The Business BBS	(310)477-0408	Utilities/Support for Microsoft Windows	Jim Appleby	Los Angeles ,CA
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Trinity 1 BBS	44 392 410210	United Kingdom Distributor of Boardwatch Magazine	John Burden	Exeter Devon ,U.K.
U.S. Robotics - Sit UBU Sit	(708)982-5092	Support for US Robotics HST 9600 bps Modems	U.S. Robotics Corporation	Skokie ,IL
US Naval Observatory BBS	(202)653-1079	Time - Date - Sunrise - Sunset - Enter @TCO for Commands	US Department of Commerce US Naval Obser	Washington ,D.C.
USGS Quick Epicenter Determin.	(303)273-8672	Earthquake Epicenter Data - Geomagnetism7E2 800-358-2663	US Geological Survey Earthquake Info Cnt	Denver ,CO
USNO Time of Day for Clocks	(202)653-0351	Xmits ASCII Time String - Sync Your PC to USNO Atomic Clock	US Naval Observatory	Washington ,D.C.
UT Library Online Catalog	(512)471-9420	Online Library Card Catalog Listing 3.5 million entries	University of Texas at Austin	Austin ,TX
Ventura Professional Forum	(408)227-4818	Ventura Publisher User's Group BBS	Gene Rodrigues - Ventura Professional	San Jose ,CA
WeatherBank	(800)827-2727	Online Weather Forecasts for Any City - Download Radar Data	Steve Root/WeatherBrief Data Services	Salt Lake City ,UT
Western Digital Tech Support	(714)753-1068	Hard Drive/Controller Installation and Config Data	Western Digital Corporation	,
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WWIV Support BBS	(310)208-6689	Support for WWIV BBS Software	Wayne Bell	Rolling Hills Estates ,CA
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XyQuest Support BBS	(508)667-5669	Support for XyWrite Word Processor - Custom Keyboard Files	XyQuest Inc. - Christine Madsen	Bellerica ,MA
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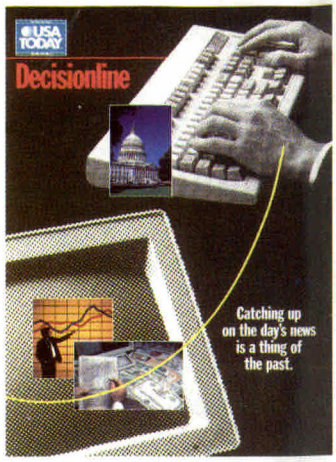

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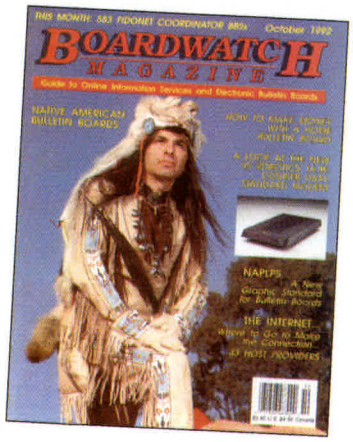

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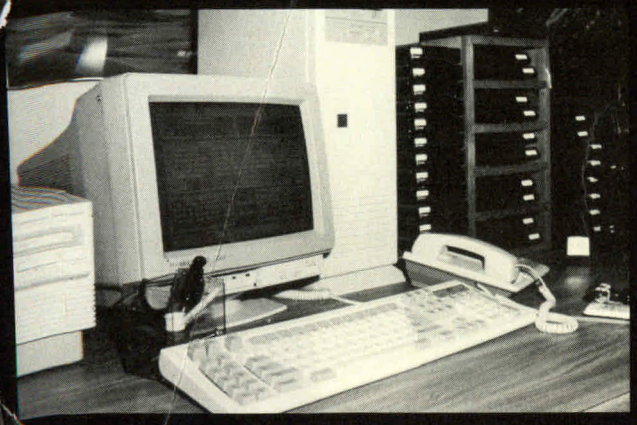

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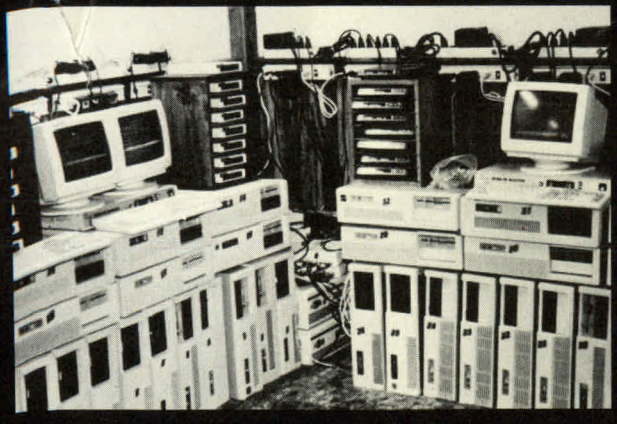

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